(6)

Supreme Court, U.S.
FILED
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No. 99-502

In The

Supreme Court of the United States

DONALD E. NELSON,

Petitioner,

v.

ADAMS USA, INC. AND
APEHEAD MANUFACTURING, INC.,

Respondents.

On Writ Of Certiorari
To The United States Court Of Appeals
For The Federal Circuit

JOINT APPENDIX

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Petition For Certiorari Filed September 2, 1999
Certiorari Granted November 29, 1999

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TERMED APPEAL

U.S. District Court
Northern District of Ohio (Toledo)

CIVIL DOCKET FOR CASE #:94-cv-7251

Filed: 05/19/94

Ohio Cellular Prod v. Adams USA, Inc., et al
Assigned to: Judge David A. Katz
Demand: $0,000
Lead Docket: None
Dkt# in other court: None
Jury demand: Both
Nature of Suit: 830
Jurisdiction: Federal Question

Cause: 28:1331 Fed. Question

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v.

ALL AMERICAN SPORTS CORPORATION
third-party defendant

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counter-claimant

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5/19/94	–	FILING FEE: on 5/19/94 in the amount of $120.00, receipt #216306. (hg)
5/19/94	1	COMPLAINT; jury demand (Service: Summons issd, magistrate consent form issd) (9 w/20 exh pgs) (dsa) [Entry date 05/20/94]
5/19/94	2	CIS filed by pltf. Recommended Track: Standard (2 pgs) (dsa) [Entry date 05/20/94]
5/19/94	3	DCM INITIAL ORDER issued. For the Court, Chief Judge Thomas D. Lambros. 2 pg(s). (dsa) [Entry date 05/20/94]
7/27/94	4	MOTION for attorney Vance A. Smith, Jack A. Wheat, Joel T. Beres to appear pro hac vice (4 pgs) (bp) [Entry date 07/28/94]

7/27/94	5	ANSWER to complaint [1-1] and COUNTERCLAIM; by defendant Adams USA, Inc. against plaintiff Ohio Cellular Prod (20 pgs) (bp) [Entry date 07/28/94]
7/27/94	5	AND THIRD-PARTY COMPLAINT: by plaintiff Ohio Cellular Prod against All American Sports (20 pgs) 3dpty summons(es) issued: ? (bp) [Entry date 07/28/94]
7/29/94	6	CERTIFICATE of service of differentiated case management initial order by plaintiff (1 pg) (bp) [Entry date 08/01/94]
8/5/94	7	RULE 19 defendant does not consent to Mag jurisdiction. (1 pg) (bp)
8/5/94	8	NOTICE OF WAIVER OF SUMMONS returned executed upon defendant Adams USA, Inc. on 7/29/94 (1 pg) (bp)
8/10/94	9	ORDER: granting motion for attorney Vance A. Smith, Jack A. Wheat, Joel T. Beres to appear pro hac vice [4-1] (issued 8/10/94) (2 pgs) Judge James G. Carr (bp) [Entry date 08/12/94]
8/17/94	10	MOTION by plaintiff to extend time until 9/14/94 to resp to deft's counterclaim (3 pgs) (bp) [Entry date 08/18/94]
8/19/94	11	JUDGMENT ENTRY: gr pltf's mot to ext time until 9/14/94 to resp to deft's counterclaim [10-1] (issued on 8/19/94) (2 pgs) Judge James G. Carr (bp) [Entry date 08/22/94]

9/2/94	12	CASE MANAGEMENT CONFERENCE scheduling notice. case management conference set 2:15 9/16/94 (issued on 9/2/94) (1 pgs) (bp) [Entry date 09/06/94]
9/13/94	13	ANSWER by counter-defendant Ohio Cellular Prod to Counterclaim [5-2] (7 pgs) (bp) [Entry date 09/14/94]
9/13/94	14	POSITION STATEMENT of defendant Re: Agenda for Case Management Conf. (3 pgs) (bp) [Entry date 09/14/94]
9/22/94	15	CASE MANAGEMENT PLAN/ORDER: Track Designation: standard, case management conference held 2:15 9/16/94; ptys decision re. conset to mag due 10/31/94; disc disclosures due 10/31/94; discovery cutoff re. liability 3/31/95; re. damages 7/15/95; Mtn cutoff for sj is 5/1/95; mot cutoff for other mots 7/31/95; status conference 1:30 p.m. on 4/21/95; firm jury trial 9:00 9/26/95 (issued on 9/22/94) (2 pgs) Judge James G. Carr (bp) [Entry date 09/26/94]
9/29/94	16	NOTICE OF WAIVER OF SUMMONS returned executed upon third-part defendant All American Sports on 9/13/94 (1 pg) (bp) [Entry date 10/05/94]
10/31/94	17	PROOF OF SERVICE by plaintiff of 1st set interr, req for prodctn of documts (2 pgs) (bp) [Entry date 11/01/94]
10/31/94	18	JOINT POSITION STATEMENT of plaintiff Ohio Cellular Prod, defendant Adams USA, Inc., third-party defendant All American Sports Re: Agenda for Case

Management Conf. (4 pgs) (bp) [Entry date 11/01/94]

11/7/94	19	ORDER: Pursuant to 11/1/94 Judges' Meeting; Case reassigned to Judge David A. Katz; subject to further order, schedules as previously set are confirmed. (issued on 11/7/94) (2 pgs) Judge James G. Carr (bp)
11/9/94	20	DISCOVERY Material – Discovery Disclosures by plaintiff directed to Court (5 pgs) (bp) [Entry date 11/10/94]
12/2/94	21	SUBPOENA returned. Issued on behalf of: deft. Served on: Donald E. Nelson on 11/30/94 by personal service. (2 pgs) (bp) [Entry date 12/05/94]
12/2/94	22	NOTICE by defendant of taking deposition & subpoena duces tecum of Donald E. Nelson on 12/19/94 at 9:30 a.m. (8 pgs) (bp) [Entry date 12/05/94]
12/2/94	23	NOTICE OF SERVICE by defendant of req to prod documts, interr, 1sst req for adms. (3 pgs) (bp) [Entry date 12/05/94]
12/12/94	24	PROOF/NOTICE OF SERVICE by defendant Adams USA, Inc. of 1st Interr & Req f/Adms to American Sports Corp (2 pgs) (ml) [Entry date 12/15/94]
1/5/95	25	MOTION by plaintiff to extend time until 1/19/95 to resp to deft's 1st req for prodctn, interr, req for adms (3 pgs) (bp) [Entry date 1/06/95]
1/17/95	26	ORDER: granting pltfs motion to extend time until 1/19/95 to resp to deft's 1st req for prodctn, interr, req for adms [25-1]

(issued on 1/17/95) (1 pg) Judge David A. Katz (ml) [Entry date 01/18/95]

1/17/95 27 PROOF/NOTICE OF SERVICE by plaintiff Ohio Cellular Prod of Responses to Interr & Req f/Adm & Ans to Req to Produce (3 pgs) (ml) [Entry date 01/18/95]

3/16/95 28 MOTION by plaintiff Ohio Cellular Prod for leave to file 1st amended complt instanter (33 pgs) (vl) [Entry date 03/17/95]

3/16/95 29 MOTION by pltf Ohio Cellular Prod and 3ddft All American Sports to extend discovery cutoff (3 pgs) (ml) [Entry date 03/17/95]

3/16/95 30 MOTION by pltf Ohio Cellular Prod and 3ddft All American Sports for protective order (2 pgs) (ml) [Entry date 03/17/95]

3/17/95 31 ATTORNEY APPEARANCE on behalf of dft/3dpla Adams USA, Inc., by atty John Charles Stewart (2 pgs) (ml) [Entry date 03/20/95]

3/17/95 32 MOTION by defendant Adams USA, Inc. for immediate telephonic conf (8 pgs) (ml) [Entry date 03/20/95]

3/17/95 32 AND OPPOSITION by defendant Adams USA, Inc. to motion to extend discovery cutoff [29-1] (8 pgs) (ml) [Entry date 03/20/95]

3/21/95 33 ORDER: granting pltf's motion to extend discovery cutoff [29-1] iscovery to be extended to 4/30/95 (issued on 3/21/95) (2 pgs) Judge David A. Katz (bp) [Entry date 03/22/95]

3/21/95 34 ORDER: the court held telephone conf; disc is ext to 4/30/95; jury trial sched for 9/26/95 is resched to commence at 9:00 a.m. on 9/27/95 (issued on 3/21/95) (1 pgs) Judge David A. Katz (bp) [Entry date 03/22/95]

3/28/95 35 NOTICE OF SERVICE by defendant of ntcdepo/req for documts dated 3/10/95 3/20/95. (3 pgs) (bp) [Entry date 03/29/95]

3/31/95 36 NOTICE by plaintiff Ohio cellular Prod of taking depositions: Gary McNabb on 4/11/95 2:00 pm, Ray Abel, Jr. 4/12//95 8:30 am, Vaughn Howard 4/12/95 1:30 pm, Jesse Boatman 4/13/95 8:30 am, John Passman 4/13/95 1:30 pm (3 pgs) (ml) [Entry date 04/03/95]

4/7/95 - MARGINAL ENTRY ORDER: granting pltf motion for leave to file 1st amended complt instanter [28-1] (issued on 4/7/95) Judge David A. Katz (ml) [Entry date 04/11/95]

4/7/95 37 AMENDED COMPLAINT by plaintiff Ohio Cellular Prod; JURY DEMAND [1-1]; adding Apehead Mfg Inc (issued none) (29 pgs) (ml) [Entry date 04/11/95]

4/7/95 38 STIPULATION and ORDER: granting pltf motion for protective order [30-1] This order shall extend to and cover all documents, things, deposition testimony, and information designated confidential by the parties or their counsel per order. (issued on 4/7/95) (8 pgs) Judge David A. Katz (ml) [Entry date 04/11/95]

4/10/95 39 SUBPOENA returned. Issued on behalf of: pltf. Served on: John Passman on 4/6/95. (2 pgs) (dsa) [Entry date 04/11/95]

4/12/95 40 JOINT AMENDED CASE MANAGEMENT PLAN/ORDER: Telephone conf held 4/15/95; disc cutoff for liability 4/30/95 (per Court order) disc start cutoff re. damages; start 7/25/95, cutoff 9/25/95; disc matter may be sched & documts srv prior to 7/25/95; but no ans due until after 7/25/95; mot cutoff for SJ is 5/15/95; resps 5/31/95; rply 6/7/95 The Court will rule on mot for by 7/25/95; mot cutoff for other mots 8/15/95; status conf originally sched for 4/21/95 is vacated; a new status conf is sched at 11:00 a.m. on 8/28/95; 8/14/95 pltf shall make a reasonable demand on defts; 8/21/95 deft to have reasonable resp to that demand; Ex parte statements re. settlement due 8/24/95; jury trl date 9/27/95; by 9/20/95 ptys to file joint concise statement, witlst, proposed jury instructions; neither pty waives its right to reset trl upon duly ntc mot setting forth good cause for the req relief. (issued on 4/12/95) (4 pgs) Judge David A. Katz (bp) [Entry date 04/13/95] [Edit date 04/13/95]

4/19/95 41 PROOF/NOTICE OF SERVICE by defendant Adams USA, Inc. of 2nd amd notice of taking depo w/Req f/Docmts (Ohio Cellular); 2nd amd notice of taking depo w/Req f/Docmts (All American Sports);

notice of taking depo of James E. Lammy, Sr. (3 pgs) (ml) [Entry date 04/21/95]

4/28/95 42 ANSWER to First Amended Complaint by defendant Adams USA, Inc. (15 pgs) (bp) [Entry date 05/01/95]

4/28/95 43 ANSWER to First Amended Complaint by defendant Apehead Mfg Inc (21 pgs) (bp) [Entry date 05/01/95]

4/28/95 43 AND COUNTERCLAIM by defendant Apehead Mfg Inc against plaintiff Ohio Cellular Prod (bp) [Entry date 05/01/95]

4/28/95 43 AND THIRD-PART COMPLAINT: by defendant Apehead Mfg Inc against All American Sports Corporation (bp) [Entry date 05/01/95]

5/15/95 44 MOTION by defendant Adams USA, Inc., defendant Apehead Mfg Inc for leave to file brief in excess of page limit (2 pgs) (als) [Entry date 05/16/95]

5/15/95 45 MOTION by defendant Adams USA, Inc., defendant Apehead Mfg Inc for summary judgment (16 pgs) (als) [Entry date 05/16/95]

5/18/95 46 ANSWER by third-party defendant All American Sports to Third Party complaint of Apehead Manufacturing (5 pgs) (bp) [Entry date 05/19/95]

5/18/95 47 ANSWER by counter-defendant Ohio Cellular Prod to Counterclaim of deft Apehead Manufacturing [43-1] (5 pgs) (bp) [Entry date 05/19/95]

5/19/95	48	ORDER: granting dfts' Adams & Apehead motion for leave to file brief in excess of page limit [44-1] (issued on 5/19/95) (2 pgs) Judge David A. Katz (ml) [Entry date 05/22/95]
5/19/95	49	MEMORANDUM by dfts Adams USA, Inc. and Apehead Mfg Inc in support of motion for summary judgment [45-1] (29 pgs) (ml) [Entry date 05/22/95]
5/19/95	50	APPENDIX by defendant Adams USA, Inc. re motion for summary judgment [45-1] (192 pgs) (ml) [Entry date 05/22/95]
5/31/95	51	MOTION by plaintiff to exceed page limitation (3 pgs) (bp)
6/2/95	–	MARGINAL ENTRY ORDER: granting pltfs' motion to exceed page limitation [51-1] (issued on 6/2/95) Judge David A. Katz (bp) [Entry date 06/05/95]
6/2/95	52	OPPOSITION by plaintiff to deft Adams motion for summary judgment w/appendix [45-1] FILED UNDER SEAL PURSUANT TO PROTECTIVE ORDER. (bp) [Entry date 06/05/95]
6/7/95	53	REPLY by defendants Adams USA, Inc. re Mot f/SJ [45-1] and pursuant to April 5, 1995 Court telephonic scheduling order. (43 pgs) (ml) [Entry date 06/08/95]
6/13/95	54	PROOF OF SERVICE by plaintiff or req for adms (2 pgs) (bp) [Entry date 06/14/95]

6/16/95	55	MOTION by plaintiff for leave to substitute completed and corrected copies (2 pgs) (bp) [Entry date 06/19/95]
6/19/95	56	PROOF/NOTICE OF SERVICE by plaintiff Ohio Cellular Prod of 2nd Req f/Prodctn of Docmts (2 pgs) (ml)
7/6/95	57	NOTICE by plaintiff of taking deposition of Adams USA, Inc., Apehead Mfg. Inc., on 7/24/95 at 9:00 a.m. (4 pgs) (bp) [Entry date 07/07/95]
7/10/95	–	MARGINAL ENTRY ORDER: granting pltf motion for leave to substitute completed and corrected copies re: Memo & Append to oppo/mot f/SJ [55-1] (issued on 7/10/95) Judge David A. Katz (ml) [Entry date 07/11/95]
7/10/95	58	OPPOSITION (corrected copies) by plaintiff to motion for summary judgment [45-1] (UNDER SEAL) (ml) [Entry date 07/11/95]
7/10/95	58	AND APPENDIX (corrected copies) by plaintiff re oppo motion for summary judgment [45-1] (UNDER SEAL) (ml) [Entry date 07/11/95] [Edit date 07/11/95]
7/17/95	59	DISCOVERY PLAN RE: FRCP 26 by dfts' Adams USA, Inc. and Apehead Mfg Inc of expert testimony (3 pgs w/35 pgs exhibits) (ml) [Entry date 07/18/95]
7/17/95	60	NOTICE by dfts' Adams USA, Inc. and Apehead Mfg Inc of change of address of their atty firms which have merged under the name of: Wheat, Camoriano,

Smith & Beres, PLC (2 pgs) (ml) [Entry date 07/18/95]

7/17/95 61 MOTION by plaintiff for telephone disc conf (5 pgs) (bp) [Entry date 07/18/95]

7/25/95 62 ORDER: Telephone conf held pursuant to certificate of discovery dispute filed by pltf. [illegible] issues in dispute were resolved; rendering the motion for telephone disc conf [61-1] moot (issued on 7/25/95) (1 pg) Judge David A. Katz (ml) [Entry date 07/26/95]

10/4/95 63 MOTION by Ohio Cellular Prod for hearing on mot f/SJ (2 pgs) (ml) [Entry date 10/05/95]

10/11/95 64 MEMORANDUM OPINION: this Court holds that Patent Nos. 4,980,110 & 5,273,702 are invalid as lacking novelty; granting deft's motion for summary judgment [45-1] (issued on 10/11/95) (8 pgs) Judge David A. Katz (bp) [Entry date 10/13/95]

10/11/95 65 JUDGMENT ENTRY: pltf's patents numbered 4,980,110 & 5,273,702 are invalid as lacking novelty; defts' mot for SJ is gr. dismissing case (issued on 10/11/95) (1 pgs) Judge David A. Katz (writ of execution issued 3/30/98 re: 1st Fed Savings & Loan, Wauseon, OH, 1st Natl Bank, Wauseon, OH, Farmers & Merchants, Wauseon, OH, Farmers & Merchants State Bank, Wauseon, OH, 1st Natl Bank NW, Bryan, OH, Natl City Bank, Wauseon, OH, State Bank & Trust, Wauseon, OH, Trustcorp Bank, Wauseon, OH, Key Bank, Bryan, OH & All

American Sports Corp, Elyria, OH) (bp) [Entry date 10/13/95] [Edit date 04/02/98]

10/20/95 66 MOTION by plaintiff to alter and amend judgment; AND for amended and additional findings; AND; for relief from judgment (17 pgs) (ml) [Entry date 10/24/95] [Edit date 12/12/95]

10/24/95 67 ORDER: telephone status conf held 10/23/95 the filing of a mot for atty fees by deft is to await a ruling on pltf's mot for reconsideration of the grant of SJ. (issued on 10/24/95) (1 pgs) Judge David A. Katz (bp) [Entry date 10/26/95]

11/2/95 68 OPPOSITION by defendants to pltf's motion to alter and amend judgment; [66-1], to motion for amended and findings; [66-2], to motion for refer from judgment [66-3] (23 pgs) (bp) [Entry date 11/03/95]

11/8/95 69 MOTION by plaintiff for leave to file rply memo in support of its mot to alter & amd judg, & relief from judg (2 pgs) (bp) [Entry date 11/09/95]

11/13/95 – MARGINAL ENTRY ORDER: granting pltf's motion for leave to file rply memo in support of its mot to alter & amd judg, & relief from judg [69-1] (issued on 11/13/95) Judge David A. Katz (bp) [Entry date 11/15/95]

11/13/95 70 REPLY by plaintiff in support of pltf's mot to alter & amd judg and for relief from judg. [66-2] (4 pgs) (bp) [Entry date 11/15/95]

12/11/95 71 MEMORANDUM, OPINION: denying motion to alter and amend judgment; [66-1], denying motion for amend and additional findings; [66-2], denying motion for relief from judgment [66-3] (issued on 12/11/95) (4 pgs) Judge David A. Katz (ml) [Entry date 12/12/95]

12/11/95 72 JUDGMENT ENTRY: Pltf's mot to alter & amd jgm, f/amd & add'l findings & f/relief from jgm is denied in its entirety. (issued on 12/11/95) (1 pgs) Judge David A. Katz (ml) [Entry date 12/12/95]

12/22/95 73 MOTION by defts Adams USA, Inc. and Apehead Mfg Inc for atty fees (25 pgs) (SYSTEM DOWN 12/21/95-12/22/95 at 12:00 pm) (dsa) [Entry date 12/27/95]

12/22/95 74 BILL OF COSTS by defts Adams USA, Inc. and Apehead Mfg Inc in the amount of $4,199.80 (11 pgs) (SYSTEM DOWN 12/21/95-12/22/95 at 12:00 pm) (dsa) [Entry date 12/27/95]

12/29/95 75 NOTICE of appeal by plaintiff Ohio Cellular Products Corp, and third-party defendant, All American Sports Corporation re judgment [65-2] (cc: all counsel-notice only. USCA-notice doc(s) (mailed on 1/4/96) (2 pgs) (hg) [Entry date 01/04/96]

12/29/95 – RECEIVED from plaintiff, and third party defendant fee in amount of $105.00 (receipt #256948) (hg) [Entry date 01/04/96]

12/29/95 76 NOTICE by plaintiff, and third-party defendant of representation by Richard M. Kerger, Donald F. Melhorn, Jr. and Steven J. Funk, and the law firm of Marshall & Melhorn. all pleadings and notices filed in this matter shall be directed to them. (2 pgs) (hg) [Entry date 01/04/96]

12/29/95 77 PRAECIPE: by plaintiff Ohio Cellular Products Corporation, and All American Sports Corporation, third-party defendant asking the Court to transmit a certified copy of the docket entries and the Federal Circuit Information Sheet (8 pgs) (hg) [Entry date 01/04/96]

12/29/95 78 FEDERAL CIRCUIT APPEAL INFORMATION SHEET of order from USCA. Clerk: Frank Gindhart (17 pgs) (hg) [Entry date 01/05/96]

1/5/96 79 TRANSCRIPT Order Form by plaintiff, and third-party defendant received. Transcript is unnecessary for appeal purposes. (1 pg) (hg)

1/5/96 80 STIPULATION and ORDER: extending time to 1/10/96 for pla to obj to bill of costs & resp to Adam's mot f/atty fees and dft gr 10 days from filing of pla's resp to reply. (issued on 1/5/96) (2 pgs) Judge David A. Katz (ml) [Entry date 01/09/96]

1/10/96 81 OBJECTIONS by Ohio Cellular Prod, All American Sports to bill of costs [74-1] (9 pgs) (ml) [Entry date 01/11/96]

1/10/96 82 OPPOSITION by Ohio Cellular Prod & All American Sports to dfts Adams &

Apehead's motion for atty fees [73-1] (9 pgs) (ml) [Entry date 01/11/96] [Edit date 01/11/96]

1/10/96 83 APPENDIX by Ohio Cellular Prod, All American Sports to oppo to motion for atty fees [73-1] (38 pgs) (ml) [Entry date 01/11/96]

1/19/96 84 STIPULATION by ptys that deft Adams USA, & Third Pty Pltf Apehead Manufacturing may have until 1/24/96 to file their rply br to the opp for mot for atty fees & costs. (3 pgs) (vl) [Entry date 01/23/96]

1/24/96 85 REPLY Memo by defendant in support of their mot for atty fees [73-1] (29 pgs) (bp) [Entry date 01/26/96]

1/24/96 86 REPLY by defts Adams USA & Apehead to Ohio Cellular's obj to Bill of Costs re [74-1] (6 pgs) (cma) [Entry date 01/26/96]

1/31/96 87 ORDER: gr ptys stipulation that dft Adams, USA & 3rd pty pltf Apehead Mfg have until 1/24/96 to file their reply brf to the opp to mot f/atty fees & costs [84-1] (issued on 1/31/96) (1 pg) Judge David A. Katz (cma) [Entry date 02/01/96]

2/7/96 88 POST-JUDGMENT MOTION by plaintiff to strike dft's rply mem in supp of dft's mot f/atty fees (3 pgs) (tc) [Entry date 02/09/96]

2/12/96 89 ACKNOWLEDGMENT from USCA for the Federal Circuit in Washington DC of receipt of Notice of Appeal (USCA FC

#:96-1173) - dt rcvd 2/5/96; dt filed 2/6/96 (3 pgs) (hg) [Entry date 02/14/96]

2/14/96 90 TRANSCRIPT Order Form (for the Federal Circuit) by plaintiff received. Transcript is unnecessary for appeal purposes. (1 pg) (hg) [Entry date 02/15/96]

2/22/96 91 OPPOSITION by defendants to pltf's motion to strike dft's rply mem in supp of dft's mot f/atty fees [88-1] (8 pgs) (bp) [Entry date 02/23/96]

12/27/96 92 TRUE cy of order from USCA for the Federal Circuit affirming the decision of the District Court [75-1]; Clerk: Jan Horbaly; Mayer, Plager & Lourie, Circuit Judges. Decision issd 12/23/96; Cost: none (8 pgs) (cma)

12/15/97 93 OPINION (INFORMATION COPY) of order from USCA for the Federal Circuit affirming the decision of the Dst Ct. which gr SJ to dfts. Clerk: Jan Horbaly; Mayer, Plager & Lourie, Circuit Judges. Opinion issd 12/23/96; Cost: none (7 w/3 exh pgs) (cma) [Entry date 01/21/97]

1/15/97 94 TRUE cy of order (JUDGMENT) from USCA for the Federal Circuit affirming the decision of the Dist Ct. Clerk: Jan Horbaly; Judgment issd 12/23/96; Cost: 103.24 (1 pg) (cma) [Entry date 01/21/97]

1/27/97 95 SUPPLEMENTAL by defendants to bill of costs [74-1] (3 pgs) (dsa) [Entry date 01/28/97]

2/12/97	96	MEMORANDUM OPINION: granting dfts' motion for atty fees [73-1]; defts are granted 30 days in which to submit the amount of fees requested and the documentation supporting such request. (issued on 2/12/97) (17 pgs) Judge David A. Katz (dsa) [Entry date 02/13/97]
2/12/97	97	JUDGMENT ENTRY: granting defts' motion for atty fees [73-1]; granting defts' bill of costs [74-1] and [95-1] in the amount of $2,672.24; denying pltf's motion to strike dft's rply mem in supp of dft's mot f/atty fees [88-1] (issued on 2/12/97) (1 pgs) Judge David A. Katz (dsa) [Entry date 02/13/97]
3/5/97	98	POST-JUDGMENT MOTION by plaintiff for order vacating Memo, Opinion & JE dtd 2/12/97 and for evid hearing re: defts' not f/atty fees (26 pgs w/44 pgs exhs) (vl) [Entry date 03/10/97]
3/12/97	99	STIPULATION by ptys for an ext of 30 days from date on which court rules on pltf's mot to reconsider and vacate Judgment Entry to submit the fees request (3 pgs) (dsa) [Entry date 03/14/97]
3/18/97	100	ORDER: deft Adams USA shall have 30 days from date on which the court rules on the pltf's motion for reconsideration to submit documentation in support of its fees and costs. [99-1] (issued on 3/18/97) (1 pgs) Judge David A. Katz (dsa) [Entry date 03/20/97]
3/19/97	101	OPPOSITION by defendant Adams USA, Inc. to pltf's motion to reconsider

and vacate judgment entry [98-1] and [98-2] (23 pgs) (dsa) [Entry date 03/21/97]

3/27/97	102	REPLY by plaintiff to deft's opp to pltf's motion for order vacating Memo, Opinion & JE dtd 2/12/97 [98-1] (6 pgs) (dsa) [Entry date 03/28/97]
4/3/97	103	MEMORANDUM OPINION: court's previous grant of defts' motion for atty fees (doc no. 96) is stayed pending a determination of the extent of Nelson's knowledge of the '037 patent at the times he prosecuted his own patent applications; an evidentiary hrg on that issue is set for 5/6/97 at 2:00 pm. (issued on 4/3/97) (11 pgs) Judge David A. Katz (dsa) [Entry date 04/08/97]
4/3/97	104	JUDGMENT ENTRY: court's previous grant of defts' motion for atty fees is stayed pending a determination of the extent of Donald Nelson's knowledge of the Marc '[037 patent at the times he prosecuted his own patent applications; evidentiary hrg on the issue is set 2:00 pm 5/6/97 (issued on 4/3/97) (1 pgs) Judge David A. Katz (dsa) [Entry date 04/08/97]
5/7/97	105	MINUTES of proceedings: before Judge David A. Katz; Court reporter Beverlee Behmke – hearing re: mot for atty fees – extend of pltf's knowledge of pre-existing patent. Test taken. deft sum mem o law; pltf to resp by 5/12/97. (1 pg) (vk) [Entry date 05/09/97]

5/27/97	106	ORDER: ct will conduct a telephone conf 11:30 am 6/16/97 (issued on 5/27/97) (1 pgs) Judge David A. Katz (dsa) [Entry date 05/30/97]
6/16/97	107	ORDER: status hearing held 6/16/97; defts are granted 45 days in which to submit a trial depo of Peter Halstead. (issued on 6/16/97) (1 pgs) Judge David A. Katz (dsa) [Entry date 06/18/97]
8/6/97	108	LETTER to court from Atty Richard Kerger; re: request leave to file briefs. (2 pgs) (dsa) [Entry date 08/08/97]
8/7/97	109	NOTICE by defendant Adams USA, Inc. of filing deposition transcript of Peter D. Halstead (2 pgs) (dsa) [Entry date 08/08/97]
8/7/97	110	DEPOSITION of Peter D. Halstead taken on the following date(s): 7/22/97 on behalf of: defts (62 w/6 exh pgs) (dsa) [Entry date 08/08/97]
8/8/97	111	ORDER: matter is before the court on pltf's request for permission to file a brief addressing the depo of Mr. David Halstead; [108-1]; pltf may file its brief on or before 8/29/97, with deft's response due 10 calendar days after filing; no replies or surreplies will be permitted (issued on 8/8/97) (1 pgs) Judge David A. Katz (dsa) [Entry date 08/13/97]
8/21/97	112	BRIEF (supplemental) by plaintiff (11 pgs) (dsa) [Entry date 08/22/97]
9/3/97	113	RESPONSE by defendant Adams USA, Inc. to pltfs supplemental brief [112-1] (9

w/2 attach pgs) (dsa) [Entry date 09/08/97]

9/25/97	114	MEMORANDUM OPINION: pltf's motion for reconsideration is denied; defts are granted 30 days in which to submit the amt of fees req and the documentation supporting such request. [98-1] [98-2] (issued on 9/25/97) (9 pgs) Judge David A. Katz (dsa) [Entry date 10/01/97]
9/25/97	115	JUDGMENT ENTRY: Ordered that pltf's mot for reconsideration (Doc. No. 98) is denied; defts are granted 30 days in which to submit the amt of fees requested and the documentation supporting such request. (issued on 9/25/97) (1 pgs) Judge David A. Katz (dsa) [Entry date 10/01/97]
10/27/97	116	MOTION (petition) by defendants for attorneys' fees (9 w/3 exh pgs) (dsa) [Entry date 10/28/97]
10/27/97	117	BILL OF COSTS by defendants in the amount of $1,322.26 (pgs) (dsa) [Entry date 10/28/97]
10/27/97	118	AFFIDAVIT (Declaration) of Jack A. Wheat (5 w/230 attach pgs) (dsa) [Entry date 10/28/97]
10/27/97	119	AFFIDAVIT (Declaration) of Vance A. Smith (7 w/44 attach pgs) (dsa) [Entry date 10/28/97]
10/27/97	120	AFFIDAVIT (Declaration) of Robert a. Bunda (3 w/56 attach pgs) (dsa) [Entry date 10/28/97]

11/20/97	121	POST-JUDGMENT MOTION by plaintiff for leave to file opp to defts mot for atty fees (2 pgs) (dsa) [Entry date 11/24/97]
11/26/97	–	MARGINAL ENTRY ORDER: granting pltf's motion for leave to file opp to defts mot for atty fees [121-1] (issued on 11/26/97) Judge David A. Katz (dsa) [Entry date 12/01/97]
12/2/97	122	OPPOSITION by plaintiff to defts' motion for attorneys' fees [116-1] (3 pgs) (dsa) [Entry date 12/03/97]
12/10/97	123	REPLY by defendant Adams USA, Inc. to pltfs' opp to deft's motion for attorneys' fees [116-1] (10 w/41 exh pgs) (dsa) [Entry date 12/11/97]
1/20/98	124	MEMORANDUM OPINION: granting deft's motion for attorneys' fees [116-1] (issued on 1/20/98) (3 pgs) Judge David A. Katz (dsa) [Entry date 01/22/98]
1/20/98	125	JUDGMENT ENTRY: Ordered that defts are entitled to an award of $178,888.51 in costs and atty fees, plus interest at the legal rate from 2/12/97 against pltf Ohio Cellular Products Corp. [116-1] (issued on 1/20/98) (1 pgs) Judge David A. Katz (dsa) [Entry date 01/22/98]
2/3/98	126	POST-JUDGMENT MOTION by defts to amend judgment & to amend 3rd pty cmp to add individual 3rd pty deft (10 pgs) (dsa) [Entry date 02/04/98]
2/19/98	127	POST-JUDGMENT MOTION by pltf to extend time until 2/28/98 to respond to defts' mot to amd judgment (2 pgs) (dsa) [Entry date 02/20/98]

2/25/98	–	MARGINAL ENTRY ORDER: granting motion by pltf to extend time until 2/28/98 to respond to defts' mot to amd judgment [127-1] (issued on 2/25/98) Judge David A. Katz (dsa) [Entry date 02/26/98]
3/2/98	128	OPPOSITION by plaintiff to motion by defts to amend judgment [126-1] (6 pgs) (dsa) [03/04/98]
3/12/98	129	REPLY by defts in support of their motion to amend judgment [126-1] & to amend 3rd pty cmp to add individual 3rd pty deft [126-2] (7 pgs) (dsa) [Entry date 03/16/98]
3/25/98	130	MEMORANDUM OPINION: Court finds that justice demands permitting defts to amd their 3-pty cmp to add Nelson as 3rd-pty deft & to amd the judgment in this action to incl Nelson as an addl pty against who judgment is entered; pursuant to FRCP such amd relates back to the filing of the orig 3rd-pty cmp f/statute of limitations purposes; defts motion to amend judgment is granted [126-1] [126-2] (issued on 3/25/98 (7 pgs) Judge David A. Katz (dsa) [Entry date 03/27/98]
3/25/98	131	JUDGMENT ENTRY: Ordered that defts' mot f/lv to amd their 3-pty cmp to name Donald E. Nelson as a 3rd pty deft in his individual capacity & to amd the judgment in this action to incl Nelson as an addl pty against whom judgment is entered is granted (issued on 3/25/98) (issued 6/12/98 to atty Bunda, Stutz re:

to Donald Nelson & Ohio Cellular Products) (1 pgs) Judge David A. Katz (dsa) [Entry date 03/27/98] [edit date 06/15/98]

4/6/98 132 POST-JUDGMENT EX PARTE MOTION by plaintiff for attys Ernest Bazzana & Robert Kamenec to appear pro hac vice (2 pgs) (dsa) [Entry date 04/07/98] [Edit date 04/07/98]

4/8/98 133 POST-JUDGMENT MOTION by Donald E. Nelson to alter & amd judgment of 3/25/98 (5 w/5 attach pgs) (dsa) [Entry date 04/09/98]

4/22/98 134 RESPONSE by defendant to motion by Donald E. Nelson to alter & amd judgment of 3/25/98 [133-1] (5w/1 attach pgs) (dsa) [Entry date 04/23/98]

4/23/98 135 MARSHAL's Return Fees: $3.00; cert mail; writ of execution (3 pgs) (dsa) [Entry date 04/24/98]

4/23/98 136 RETURN OF SERVICE unexecuted – attempted as to Kay Bank (3 w/envelope attach pgs) (dsa) [Entry date 04/24/98]

4/23/98 137 MARSHAL's Return Fees: $3.00 as to Farmers & Merchants State Bank; writ of Execution; 4/16/98 (3 pgs) (dsa) [Entry date 04/24/98]

4/23/98 138 MARSHAL's Return Fees: $3.00; served at First Federal Savings & Loan; 4/16/98; by cert mail; re writ of execution (3 pgs) (dsa) [Entry date 04/24/98]

4/23/98 139 MARSHAL's Return Fees: $3.00 as to First National Bank 4/16/98 by cert

mail; re: writ of execution (3 pgs) (dsa) [Entry date 04/24/98]

4/23/98 140 MARSHAL's Return Fees: $3.00, Farmers & Merchants State Bank 4/16/98 by cert mail; writ of Execution (3 pgs) (dsa) [Entry date 04/24/98]

4/23/98 141 MARSHAL's Return Fees: $3.00; National City Bank on 4/16/98 by cert mail; re: writ of execution (3 pgs) (dsa) [Entry date 04/24/98]

4/23/98 142 MARSHAL's Return Fees: $3.00; Trustcorp Bank Ohio 4/16/98 by cert mail; re: writ of execution (3 pgs) (dsa) [Entry date 04/24/98]

4/23/98 143 MARSHAL's Return Fees: $3.00; State Bank & Trust Company 4/16/98 by cert mail; re: writ of execution (3 pgs) (dsa) [Entry date 04/24/98]

4/23/98 144 LETTER from First Natl Bk NW OH stating that it has no open account w/Ohio Cellular Products at this time in response to writ of execution dated 3/30/98 (1 pgs) (dsa) [Entry date 04/27/98]

4/23/98 145 RESPONSE by Farmers & Merchants State Bank to writ of execution dated 3/30/98 stating no accounts/4/17/98 (5 pgs) (dsa) [Entry date 04/27/98]

5/7/98 146 REPLY by Donald E. Nelson to response of deft Adams USA to motion by Donald E. Nelson to alter & amd judgment of 3/25/98 [133-1] (6 pgs) (dsa) [Entry date 05/11/98]

5/11/98	147	LETTER to court from State Bank and Trust Company stating that it has no open accounts w/Ohio Cellular Products Corp in response to writ of execution dated 3/30/98 (1 w/4 attach pgs) (dsa) [Entry date 05/13/98]
5/15/98	148	ORDER: granting pltf's motion for attys Ernest Bazzana & Robert Kamenec to appear pro hac vice [132-1] (issued on 5/15/98) 1 pgs) Judge David A. Katz (dln) [Entry Date 05/18/98]
5/15/98	149	STIPULATION and ORDER FOR SUBSTITUTION OF ATTORNEYS: Attys Ernest R. Bazzana and Robert G. Kamenec shall take the place of their current representatives Richard Kerger and Daniel F. Marinik (issued on 5/15/98) (2 w/2 attach pgs) Judge David A. Katz (dln) [Entry date 05/18/98]
5/18/98	150	MEMORANDUM OPINION: Pltf Donald E. Nelson's motion to alter & amd judgment is denied [133-1] (issued on 5/18/98) (5 pgs) Judge David A. Katz (dln) [Entry date 05/20/98]
5/18/98	151	JUDGMENT ENTRY: Ordered that pltf Donald E. Nelson's mot to alter & amd judgment is denied [133-1] (issued on 5/18/98) (1 pgs) Judge David A. Katz (dln) [Entry date 05/20/98]
6/1/98	152	POST-JUDGMENT MOTION (supplemental) by defts for attorney fees (4 pgs) (dln) [Entry date 06/04/98]
6/1/98	153	DECLARATION of John W. Scruton in support re: supplemental motion by

		defts for attorney fees [152-1] (13 pgs) (dln) [Entry date 06/04/98]
6/1/98	154	DECLARATION of John P. Hayward re: supplemental motion by defts for attorney fees [152-1] (4 pgs) (dln) [Entry date 06/04/98]
6/9/98	155	MARSHAL's Return Fees: $3.00; served at First National Bank, NW OH by cert mail; writ of execution (3 pgs) (dln) [Entry date 06/11/98]
6/11/98	156	RESPONSE by plaintiff to supplemental motion (petition) by defts for attorney fees w/cert of service [152-1] (5 pgs) (dln) [Entry date 06/12/98]
6/15/98	158	REPLY by defendants to response to supplemental motion by defts for attorney fees [152-1] (4 pgs) (dln) [Entry date 06/17/98]
6/16/98	157	NOTICE of appeal (to the Federal Circuit) by pltf Ohio Cellular Prod re judgment fld 2/12/97 [97-1], re judgment fld 9/25/97 [115-1], re fld 1/20/98 [125-1], re judgment fld 3/25/98 [131-1], re judgment fld 5/18/98 [151-1] (cc: all counsel-notice only. USCA-notice and doc(s) mailed on 6/16/98) (2 w/67 exh pgs) (cma) [Edit date 06/22/98]
6/16/98	–	RECEIVED fee in amount of $105.00 (receipt # 304260) (cma) [Entry date 06/18/98]
7/15/98	159	ACKNOWLEDGMENT from U.S. Ct of Appeals for the Federal Circuit of receipt of pltf-applnt Ohio Cellular's

Notice of Appeal (Case No. 98-1448) (3 pgs) (cma) [Entry date 07/17/98]

7/17/98 160 TRANSCRIPT Order Form by pltf-applnt recd for U.S. Court of Appeals, Fed'l Circuit. Transcript is nec for appeal purposes (mot hrg on 5/7/97); ct rptr Beverlee Behmke. (1 pg) (cma)

7/30/98 161 MEMORANDUM AND JUDGMENT ENTRY: Pltfs have not objected to the reasonableness of the amts of any of the costs and/or fee requested; Ct has reviewed the amts req & has determined that such amts are reasonable; therefore, defts's fee petition is approved in the amt of $4,451.36 [152-1] (issued on 7/30/98) (2 pgs) Judge David A. Katz (dln) [Entry date 08/03/98]

8/11/98 162 ATTORNEY SUBSTITUTION: attys Phillip Oberlin & Steven Funk no longer represent pltf; replaced by attys Bazzana and Kamenec (1 pgs) (dln) [Entry date 08/13/98]

8/14/98 163 TRANSCRIPT of proceedings before Judge David A. Katz taken on 5/6/97 by court reporter Beverlee Behmke (134 pgs) (dln)

8/31/98 164 STIPULATION and ORDER: Order staying execution pending appeal on posting of irrevocable letter of credit in lieu of supersedeas and costs bonds (issued on 8/31/98) (2w/2 attach pgs) Judge David A. Katz (dln) [Entry date 09/02/98]

8/31/98 165 ORDER: Staying stipulation for entry of order staying execution pending appeal on posting of irrevocable letter of credit

in lieu of supersedeas and costs bonds (issued on 8/31/98) (2 pgs) Judge David A. Katz (dln) [Entry date 09/02/98]

2/18/99 166 NOTICE by defendant of change of address of counsel (2 pgs) (dln) [Entry date 02/19/99]

5/4/99 167 OPINION from USCA, Federal Cir. affirming the decision of the dist ct. Circuit Judges: Newman, Michel, and Plager (this is not a mandate) (16 pgs) (cma) [Entry date 05/07/99]

6/14/99 168 (JUDGMENT) TRUE cy of order from US Fed'l Circuit affirming the decision of the District Court [157-1]; Clerk: Jan Horbaly; judgment issd 6/10/99; Cost: none (1 pg) (cma) [Entry date 06/18/99]

8/2/99 169 POST-JUDGMENT MOTION by "3rd pty deft" Donald Nelson for relief from judgment (17 w/22 attach pgs) (dln) [Entry date 08/04/99]

8/2/99 170 ATTORNEY APPEARANCE on behalf of "3rd pty deft" Donald Nelson and pltf by attys Debra Dixon and James Deese (2 pgs) (dln) [Entry date 08/04/99]

8/10/99 171 RESPONSE by defendant to motion by "3rd pty deft" Donald Nelson for relief from judgment [169-1] (9 pgs) (dln) [Entry date 08/11/99]

8/23/99 172 SUPPORT MEMO (REPLY) to motion by "3rd pty deft" Donald Nelson for relief from judgment [169-1] (15 pgs) (dsm) [Entry date 08/27/99]

8/27/99	173	POST-JUDGMENT MOTION by defts for leave to file sur reply (3 pgs) (dln) [Entry date 08/31/99]
9/1/99	–	MARGINAL ENTRY ORDER: granting motion by defts for leave to file sur reply [173-1] (issued on 9/1/99) Judge David A. Katz (EOD Date: 9/7/99] (dln) [Entry date 09/07/99]
9/1/99	174	SUR REPLY by defts [169-1] to "3rd pty deft" Donald Nelson reply memo in support of his motion for relief from judgment (4 pgs) (dln) [Entry date 09/07/99]
9/16/99	175	POST-JUDGMENT MOTION (notice) by pltf to withdraw attorney Bazzana (3 pgs) (dln) [Entry date 09/17/99]
9/21/99	–	MARGINAL ENTRY ORDER: granting motion by pltf to withdraw attorney Bazzana [175-1] & attorney Robert Kamenec of Plunkett & Cooney (issued on 9/21/99) Judge David A. Katz [EOD Date: 9/23/99] (dln) [Entry date 09/23/99]
9/22/99	176	MEMORANDUM OPINION: denying motion by "3rd pty deft" Donald Nelson for relief from judgment [169-1] (issued on 9/22/99) (6 pgs) Judge David A. Katz [EOD Date: 9/24/99] (dln) [Entry date 09/24/99]
/22/99	177	JUDGMENT ENTRY: Ordered that Donald Nelson's mot for relief from judgment is denied (issued on 9/22/99) (1 pgs) Judge David A. Katz [EOD Date: 9/24/99] (dln) [Entry date 09/24/99]

10/19/99	178	NOTICE of appeal by "3rd pty dft Donald Nelson" re judgment fld 9/22/99 [177-1] (cc: all counsel-notice only. USCA-notice and doc(s) mailed on 10/20/99) (2 pgs) (cma) [Entry date 10/20/99] [Edit date 10/20/99]
10/19/99	–	RECEIVED fee in amount of $150.00 (Receipt # 307757) (cma) [Entry date 10/20/99]

ORIGINAL

In The United States District Court
For The Northern District Of Ohio
Western Division

Ohio Cellular Products Corporation	)	Case No. 3:94CV7251
Plaintiff,	)	Hon. David A. Katz
v.	)	**Stipulation and**
Adams USA, Inc.	)	**Protective Order**
Defendant.	)	(Filed Apr. 7, 1995)

The parties anticipate that during the course of this proceeding they will need to conduct discovery into confidential documents, things, testimony, and information, including information gained by inspection of equipment or premises. The parties wish to facilitate this discovery, but they also wish to protect the confidentiality of the documents, things, testimony, and information disclosed during the discovery process. Accordingly, the parties stipulate and agree to the entry of the following protective order.

1. Documents, Things, Testimony, and Information Covered by Order. This order shall extend to and cover all documents, things, deposition testimony, and information designated confidential by the parties or their counsel.

2. Designation of Documents, Things, Testimony, and Information as Confidential. The parties or their counsel may designate as confidential any document, thing, deposition testimony, or information produced or

disclosed in course of this proceeding. Interrogatory responses disclosing confidential information shall be separately set forth from those portions not disclosing confidential information, and shall be specifically labeled "Confidential." Documents and things containing confidential information that are produced in response to requests for production, subpoenas, or voluntary disclosure, shall be stamped with the word "Confidential." Deposition testimony containing confidential information shall be identified on the record as such during the course of the deposition and separately transcribed by the court reporter. The parties may also designate deposition testimony as confidential within thirty days of their counsel's receipt of the transcript of the deposition. Confidential documents, things, and information disclosed voluntarily shall be designated confidential in a manner reasonably calculated to impart notice that confidential information is being disclosed.

3. Use and Treatment of Documents, Things, Testimony, and Information Designated Confidential. Documents, things, testimony, and information designated confidential by a party shall be used only for the purpose of conducting this litigation and not for any business or other purpose. No such information designated confidential shall be disclosed to any party to this litigation, or any officer, director, or employee of any party. Disclosure for the purpose of conducting this litigation may be made only as follows.

(A) To counsel of record and their employees.

(B) To persons identified as expert witnesses by the parties to this litigation, provided, however, that no disclosure may be made

to such persons until seven days after they have been identified to opposing counsel and they have executed a confidentiality agreement containing the following declarations: "I understand that confidential documents, things, testimony, and information protected by Court Order are about to be disclosed to me. I acknowledge that I have received a copy of this Court Order, and understand that I will be and am bound by its terms and conditions." In the event that the opposing counsel objects to the proposed disclosure, they shall so notify the party proposing to make the disclosure, and within seven days thereof file a motion setting forth the reasons why disclosure should not be permitted. Upon being notified of an objection to a proposed disclosure, no disclosure shall be made until such time as the Court has ruled upon the motion filed by the objecting party. If no motion is filed by the objecting party the proposed disclosure may proceed as proposed.

(C) To the Court, provided, however, that all confidential documents, things, testimony, and information disclosed to the Court shall be filed with the Clerk under seal in an envelope bearing the caption of this case and the following designation; "FILED UNDER SEAL PURSUANT TO PROTECTIVE ORDER: CONTAINS CONFIDENTIAL INFORMATION."

4. Disclosures and Third Parties. All parties and their counsel of record shall not otherwise suffer or permit disclosure of confidential documents, things, testimony, and information in violation of this order, and shall exercise good faith and utmost care to avoid unnecessary disclosure. Any person who discloses confidential documents, things, testimony, and information to another person falling into the categories set forth in paragraph 3. hereinabove, shall advise such person of the existence of this protective order and of its terms. All persons to whom confidential documents, things, testimony, and information are disclosed shall abide by the provisions of this protective order. Any party who receives a subpoena from a non-party, or other process purporting to require disclosure of confidential documents, things, testimony, and information, shall forthwith provide notice thereof to all other parties and their counsel. No one shall disclose any confidential information so sought without appropriate court order. The prohibitions contained herein shall apply to deposition testimony that is designated confidential by a party within thirty days of the receipt by counsel for that party of the transcript of the deposition, provided, however, that said prohibitions shall apply only (1) to persons falling into the categories set forth in paragraph 3. hereinabove, and (2) to disclosures occurring after counsel for the non-designating party has been advised of the designation and has had a reasonable opportunity to notify the other persons falling into the categories set forth in paragraph 3. hereinabove of the post transcription designation. Counsel for each party shall be responsible for establishing and maintaining a Confidential Information Log which shall contain the

name, address, and telephone number of each person provided access to the confidential information so disclosed under this Order, the first date of such access, and a brief description sufficient to identify the confidential information.

5. **Declassifying.** Any party objecting to the classification of any document, thing, testimony, or information as confidential shall serve written notice of such objection on the designating party, with copies to every other party. Such notice shall specify the document, thing, testimony, or information sought to be declassified, their reasons for declassification, and the use that will be made of the document, thing, testimony, or information if declassified. The designating party shall, within fourteen days of receipt of such notice, review the document, thing, testimony, or information sought to be declassified and shall notify every party in writing whether declassification will be permitted. If the designating party does not agree to declassification, any party may move the court for an order declassifying the specified document, thing, testimony, or information. The specified document, thing, testimony, or information shall continue to be covered by this order and to receive confidential treatment until the Court orders otherwise.

6. **Other Disclosure.** Any party wishing to disclose confidential documents, things, testimony, or information in a manner not contemplated hereby shall first seek the consent of the designating party. Any consent given by the designating party shall be in writing. Any person to whom confidential documents, things, testimony, or information are disclosed pursuant to such consent shall

execute a confidentiality agreement containing the declarations specified in paragraph 3.(B) hereinabove. Should the designating party refuse to give consent, the party wishing to make a disclosure not contemplated hereby shall first file a motion with the court that describes the proposed disclosure in detail, and explains the reasons why the proposed disclosure is necessary to the prosecution or defense of the moving party's case. The proposed disclosure shall not be made unless and until it is specifically authorized by the Court. Counsel for each party shall be responsible for establishing and maintaining a Confidential Information Log which shall contain the name, address, and telephone number of each person provided access to the confidential information so disclosed under this Order, the first date of such access, and a brief description sufficient to identify the confidential information.

7. **Return of Documents, Things, Testimony, and Information Designated Confidential.** Within forty-five days of the final adjudication of this action, including appeals, attorneys for each party shall, upon request, return all confidential documents and information to the party who produced such documents, including any copies, extracts or summaries thereof containing confidential information and shall purge confidential information from all machine readable media or destroy such media, but excluding any materials which in the judgment of the attorneys in possession of such materials are work product materials, as to which those attorneys will take reasonable steps to ensure the continued protection of confidential information contained therein.

8. Public or Privileged Information. The restrictions set forth in any of the preceding paragraphs shall not apply to information which (a) was or becomes public knowledge, not in violation of the Order, or (b) was or is acquired in good faith from a third party, not a party to this litigation, having the right to disclose such information, or (c) was or is discovered independently by the receiving party. Nothing in this Protective Order shall require disclosure of materials which counsel contends are not relevant to the subject matter of the action or are protected from disclosure by the attorney-client privilege or the attorney work product privilege

9. Advice and Comments to Clients. Nothing herein shall preclude attorneys from advising their clients with respect to this case, or generally commenting on confidential documents, things, deposition testimony, or information, so long as such advice and comment does not does not [sic] disclose the confidential documents, things, deposition testimony, or information.

10. Additional Protective Orders. Nothing in this protective Order shall limit any of the parties in applying to the Court for relief from this Protective Order, or for such further or additional protective orders as the Court may deem appropriate.

Roach & Wheat

By /s/ Joel T. Beres
Counsel for
Defendant

Marshall & Melhorn

By /s/ Steven J. Funk
Counsel for
Plaintiff

It Is So Ordered:

_____ Date _____

United States Patent [19] [11] **Patent Number: 4,980,110**
Nelson et al. [45] **Date of Patent: Dec. 25, 1990**

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[54] METHOD OF FORMING A CROSS LINKED FOAMED POLYOLEFIN COMPOSITE ARTICLE

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[52] U.S. Cl. 264/152; 264/160; 264/241; 264/247; 264/273; 264/321

[58] Field of Search..... 264/321, 276, 279.1, 264/152, 160, 241, 247, 273

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[57] ABSTRACT

A method for forming soft, resilient, smooth, energy dissipating articles from foamed partially cross-linked polyolefins wherein sheet stock is cut into a preform and the preform while at room temperature is positioned within a mold cavity formed by partible mold halves. The preforms and the cavity of the molds are so arranged and constructed that after molding there is no flashing needing trimming because the polyolefin is substantially confined within the cavity without any lateral projection into the parting surfaces of the mold.

23 Claims, 4 Drawing Sheets

[Diagrams Omitted]

METHOD OF FORMING A CROSS LINKED FOAMED POLYOLEFIN COMPOSITE ARTICLE

TECHNICAL FIELD

The present invention relates to the manufacture of cushioning, or energy absorbing, materials such as, for example, that traditionally used in athletic equipment.

Even more particularly the present invention relates to methods of molding a moldable, cross-linked, foamed polyolefin. The present invention is also directed to methods for producing tenaciously bonded laminates of cross-linked closed-cell foamed polyolefin in which one of the laminate layers has a density different than the other laminate layer.

BACKGROUND ART

Articles have been manufactured in the past from foamed, cross-linked polyolefin wherein such articles were intended for use as shock absorbing, or cushioning members, in a wide variety of applications, including athletic equipment. Such members have been manufactured by others by a process wherein a panel, or sheet-stock, of foamed cross-linked polyolefin (FXLPO), particularly polyethylene, is heated to an elevated temperature and this preheated material then manually positioned within a mold in such manner that a peripheral portion is clamped and sealed in the parting line of complimentary partible mold elements. The material can be further heated and either vacuum molded or compression molded to a preselected shape. It will be appreciated that difficulty is encountered in handling such heated sheet stock because of the tacky, adhesive and cohesive nature of the heated FXLPO material. Quite commonly in manually handling the heated FXLPO panel, portions thereof stick together prior to proper positioning in the mold, hence resulting in a situation where an acceptable product can not be manufactured and material is wasted. Additionally, because of the clamping of the peripheral boundary of the panel in the mold parting line a great

deal of waste flashing is created and must be removed. This, of course, uneconomically increases labor costs and material costs.

The problems noted above are common in forming various pads for sports and athletic equipment such as, for example, hip pads, thigh pads, and knee pads for football equipment. The laterally extending flashing problem in forming such pads is particularly troublesome from a labor and wasted material point of view.

Present hip pad configurations for use with football equipment, generally have substantially raised, somewhat centrally located portions extending outwardly from a base portion. With the above-described manufacturing techniques currently employed, it is expensive to form such raised portions of a material which is not the same as the material of the base portion of the hip pad. That is, because of the difficulty in handling the tacky, hot sheet stock and the problem of accurately manually positioning, and indexing, a different material unto such a tacky material, such pads are unitarilly formed from a single piece of sheet stock. It would be desirable to have a process wherein such hip pads could be formed with the raised portion and base portion being of different materials.

In manufacturing thigh pads by the above process there currently is a problem with regard to unacceptable entrapment of air during forming and also difficulty in properly indexing the components used to form these pads. Such thigh pads typically would be formed by first positioning a heated panel of cross-linked, foamed polyolefin in a mold portion, followed by positioning a rigid

plastic insert upon the preheated panel. This, in turn, would then be followed by positioning another panel of heated, foamed, cross-linked polyolefin onto the plastic insert in a manner so as to both encapsulate the insert between the two panels, and join the panels at their periphery. The materials would then be peripherally clamped at a mold parting line. This technique, because of the adhesive nature of the heated panels, obviously creates an air entrapment problem if the air is not removed as the laminate is being built up. The removal of such air when handling the sticky, heated panels is indeed, a difficult task. The entrapped air then creates air pockets during molding, resulting in a product which could be unacceptable. Indexing is also quite difficult when one considers the sticky, adhesive and cohesive characteristics of the FXLPO which is being handled. Both of these problems contribute to poor quality, increased labor costs and increased wasted material.

Thus it will be seen that there is a need in the art for providing a process wherein products can be formed without encountering the undesired sticking problem which results when handling heated, foamed, cross-linked polyolefin. A process is also needed wherein the undesired formation of laterally extending flashing during the molding operation is virtually eliminated. A process is also needed wherein laminates can be formed such as, for example, thigh pads without encountering severe air entrapment problems between the various layers.

DISCLOSURE OF THE INVENTION

In accordance with the present invention an improved process is provided which satisfies the above indicated needs in the art.

In accordance with one feature of the present invention a process is provided for forming a soft resilient self-supporting energy-dissipating article in a mold having partible mold portions, the mold when in a closed position, defining an article forming cavity which includes a smooth arcuate edge and said mold having a peripheral parting surface, the process comprises: cutting sheet stock of foamed resilient cross-linked polyolefin into preforms inherently having a somewhat rough non-arcuate edge, said polyolefin being at least capable of being sufficiently thermoformed, or molded, to allow such edge to be formed into an arcuate smooth edge, and said preforms, in plan view, having in one embodiment a peripheral configuration, when in a relaxed condition, substantially corresponding to the peripheral shape of the cavity in plan peripheral view; at about room temperature, positioning a sufficient number of said preforms and, optionally, at least one insert into a mold portion so that upon closing and heating the mold said preform or preforms and optional insert are placed in gentle compressive contact with the cavity and are substantially confined within said cavity without lateral projection into said peripheral parting surface; closing the mold and heating the closed mold for a sufficient period of time to allow said non-arcuate, rough edge of said polyolefin to be thermoformed (heat formed) into a smooth, arcuate edge by contact with the smooth arcuate edge of said mold cavity. When plural preforms are used and/or

optional insert is employed, the heating is sufficient to form a bonded unitary article.

In another embodiment, e.g. when the mold cavity is arcuate in plan view, the preform can be cut as a generally rectilinear member and the member bent when positioning in the mold as opposed to the previous embodiment where it can be directly positioned in the mold cavity without significant bending.

In accordance with another feature of this invention an article of manufacture is provided which is a laminate composed of a first portion of a foamed cross-linked polyolefin and a second portion of a foamed cross-linked polyolefin tenaciously bonded to said first portion, said second portion having a density greater than said first portion. In accordance with another feature of this invention, such laminate carries fastening means and is employed as a cushioning means, e.g. internally of protective headgear like the jaw pad in a football helmet.

In accordance with another feature of this invention there is provided a method for forming a solid self-supporting resilient cross-linked, foamed moldable polyolefin into a soft, energy-dissipating article in a mold having partible mold portions, said mold, when in a closed position defining an article forming cavity and having a peripheral parting surface, the method comprising: cutting stock of said polyolefin into preforms; at about room temperature positioning a sufficient number of said preforms, and, optionally, at least one insert, into said mold so that upon closing said mold and heating same, said mold cavity is filled with said sufficient number of preforms, and optional insert, tut [sic] without

either, or any, laterally extending into said peripheral parting surface; closing said mold and heating said closed mold containing said preforms, and optional insert, for a sufficient period of time for said preforms to conform to the adjacent mold cavity and said optional insert, when present, to bond to an adjacent portion of at least one of said sufficient number of preforms and thereby form a bonded, single piece article which is substantially free of flashing.

In accordance with another feature of this invention, a laminated article is provided comprising a first layer of foamed cross-linked polyolefin and a second layer of material overlaying said first layer of polyolefin, said second layer carrying perforate indicia and a portion of said first layer extending into said perforate indicia of said second layer. When different colored layers are employed the configuration can provide attractive identification and aesthetic appeal.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will become more apparent by reference to the drawings wherein:

FIG. 1 illustrates the cutting of sheet stock into preforms;

FIG. 2 illustrates a mold, preforms and an insert which are used in accordance with the method of this invention;

FIG. 3 is a three dimensional representation of one of the products formed in accordance with the present invention;

FIG. 4 is a three dimensional representation of a protective head gear which is provided with the article shown in FIG. 3; 15 FIG. 5 is a sectional view taken along the line 5 – 5 of FIG. 4;

FIG. 6 illustrates the preforms and an insert employed in accordance with the present invention to form a thigh pad;

FIG. 7 is a three dimensional representation of a mold used to form such a thigh pad;

FIG. 8 shows the mold of FIG. 7 in a closed position and containing the preforms and insert of FIG. 6;

FIG. 9 is a three dimensional representation of a thigh pad formed in accordance with the present invention;

FIG. 10 is a sectional view taken along the line 10 – 10 of FIG. 8 and shows a thigh pad being molded;

FIG. 11 is a sectional view taken along the line 11 – 11 of FIG. 8 also showing the molding of a thigh pad.

DETAILED DESCRIPTION OF THE INVENTION

As previously indicated the present invention contemplates the use of the foamed cross-linked polyolefin (FXLPO) material in the form of a sheet or bun-stock. Such materials are readily commercially available and are supplied by Dynamit Nobel of America, Inc. under the trademark TROCELLEN, and by Monarch Rubber Co., under their designation Evalite. The polyolefins can be homopolymers of ethylene or homopolymers of propylene and/or copolymers of ethylene and/or propylene with copolymerizable monoolefinically unsaturated

monomers such as, for example, vinyl acetate. One such copolyxer which is widely commercially available is a copolymer of ethylene and vinyl acetate, typically with up to about 30% by weight of vinyl acetate as the comonomer. These materials are cross-linked by irradiation or by the use of chemical cross-linking agents such as the peroxides and hydroperoxides. Foaming is accomplished by using any of many well-known chemical or physical foaming agents. The (FXLPO) materials contemplated for use in the present invention obviously are not cross-linked to the extent that they are no longer formable. That is, the materials employed should only be partially cross-linked and the cross-linking should allow for the materials to be put into a mold and possess sufficient moldability, or deformability, when heated so that at least a rough cut edge can conform (flow or deform) to a smooth arcuate surface of the mold, whereby an article can be formed which has smooth edges rather than rough cut edges. These materials generally have high heat resistance, good fatigue resistance and good resistance to a wide variety of environmental conditions. In general the densities of the foamed cross-linked polyolefins (FXLPO) employed can vary over a wide range. Quite outstanding results will be obtained using materials having densities in the range of about 2 to about 10 or 12 pounds per cubic foot.

Referring to FIGS. 1-5, sheet stock 26 of the FXLPO material is first cut, for example using a die cutter 22, to form preforms 28. Molding of a preform, or a plurality of preforms either with or without the use of an insert, is effected by the use of metallic partible molds, respectively 10 and 12. Partible mold portion 12 includes an

article forming cavity 18, which as seen in FIG. 2, is generally arcuate, or C-shaped, in plan view. Cavity 18 is so formed that its lower edges 20 are smooth and founded so as to produce a more comfortable and aesthetically appealing product. When in a closed position the peripheral parting surfaces 14 and 16 of the mold are brought into intimate contact with each other. Partible mold portion 10 is provided with an inwardly (or downwardly) projecting molding surface 21 which upon closing snugly nests within cavity 18 and defines an article molding surface.

At least one preform 28 is employed which, in plan view, has a peripheral configuration substantially corresponding to the peripheral shape of cavity 18 in plan view. That is both cavity 18 and preform 28 are substantially the same in plan peripheral view. Alternatively, however, a preform can be cut which is generally a rectilinear preform 30 by use of a suitable cutting die 24. When a rectilinear member 30 is employed, it will need to be bent before it can be positioned within mold cavity 18. This is in contrast to the use of the C-shaped preform 28 which may be substantially directly placed within cavity 18. In either case, however, because of the cutting operation, the preforms are generally provided with rough cut edges 32. Of course, for aesthetic purposes and comfort when used in contact with the skin, these rough edges need to be formed into smooth rounded edges in the mold.

In referring to FIG. 2 alternate options of the present invention become apparent. In FIG. 2 plural preforms are employed, namely a preform 28 and a preform 29 which generally is of lesser thickness. These preforms obviously

can be tailored for preselected end uses by using FXLPO materials which have different densities. When different densities are not desired, a single preform 28 may be employed.

FIG. 2 also illustrates the optional use of a insert 34 which integrally carries suitable fastening means 36. Fastening means 36 can be any of a numerous variety of available fasteners, including metallic fasteners having orifices for snapping engagement with complementary fastening means on another article, or the fastening means can be Velcro material. There may, of course, be no need to employ any insert or an insert which carries fastening means depending on the desired end use.

In the embodiment set forth in FIG. 3, a soft, resilient, self-supporting energy dissipating jaw pad 42, which will be employed inside of a protective head gear such as, for example, football helmet 38 is illustrated. Such a pad needs to possess optional insert 34 which carries appropriate fastening means 36. Generally, insert 34 may be of any convenient material depending on the ultimate use including plastics (both thermoplastic and thermoset) or metals, for example aluminum, and paperboard. The insert can also be a reinforcing mat such as a glass fiber reinforcing mat or a polymeric reinforcing mat such as a polyethylene terephthalate fibrous mat. The insert may, or may not, include the integral fastening means 36 depending on the ultimate product use. The insert may take the form of a sheet, either curvilinear or planar, a film or a fabric, either woven or nonwoven. Outstanding products have been produced in accordance with this invention by using inserts whose resistance to flexure has been greater than that of the FXLPO material used for the

preform(s), i.e. the insert generally will be less elastic or more rigid. For the jaw pad example, the insert may be a polyolefin, preferably a cross-linked polyolefin and most desirably a foamed cross-linked polyolefin but one which has slighter greater density than the preform 28, and optional preform 29.

Preform 28 is positioned within cavity 18, and is overlayed with optional preform 29. Insert 34 is then positioned, or overlayed, on top of preform 29. Partible mold 10 is then brought into contact with the lower partible mold portion 12. The article defining molding surface of the formed cavity (including the snugly nesting molding surface 21) and the preform, or preforms, and optional insert, are selected so that upon closing the mold, preform 28, or optional preform 29 and the optional insert 34 are placed in gentle compressive contact with the cavity. Additionally, whether a single preform is used or plural preforms, either with or without an insert, the gently compressed material to be molded and/or bonded is within the article defining surfaces of the mold and are substantially confined within the mold and its cavity forming surfaced without laterally projecting into the peripheral parting surfaces 14 and 16 of mold halves 10 and 12.

The closed mold containing the molding materials 28, 29, 34 is then heated in any convenient manner such as, for example, in an air heated oven. The molds can also be heated by putting them in contact with any suitable heat transfer medium or for that matter designing the molds to allow the passage of a heat transfer medium therethrough. As previously indicated, it is generally desired to convert rough cut edges 32 to a smooth curved arcuate

edge 33 by molding the rough cut edge 32 in contact with the smooth edge 20 of the cavity 18. Consequently, the mold and materials to be molded, are heated to a temperature and for a time at least sufficient to effect that objective, that is for the rough edge to be molded and formed into a curved smooth edge. Typically, the heating is done at a temperature in the range of about 250° F. to about 500° F. for about 1 to about 20 minutes. During such heating not only are rough edges converted to smooth edges but in general the entire preform 28 takes on the configuration of the molding surfaces and results in the production of a much smoother aesthetically pleasing article.

After cooling, final article 42 is removed from the mold. This article, which is represented in the form of a C-shaped member, is employed inside of protective headgear like football helmet 38, as a safety and energy absorbing member. Headgear 38 includes a rigid protective shell 40 of a suitable polymeric material and the article 42 is disposed internally of shell 40 as a jaw pad. The jaw pad 42 is attached to the shell 40 by suitable inter-engaging fastening means, generally designated 44, one part 46 of which is carried by the shell 40 and the other part 36 of which is carried by jaw pad 42. The fastening means 44 can best be seen in FIG. 5 which shows the attachment of jaw pad 42 to shell 40 by the inter-engaging fastening means 46 and 36, respectively. In the preferred embodiment the fastening means 44 will be conventional metallic snap fasteners.

Thus from the above it will be apparent that the present method provides a technique whereby a variety of FXLPO materials, e.g. of varying densities, can be

tenaciously heat bonded to each other and/or molded into finished articles have smooth surfaces. By properly selecting at least one preform (or a plurality of preforms) either with or without an insert, to fill the cavity so that the preform, or preforms and optional insert are placed in gentle compressive contact with the molding surfaces but are confined within the cavity and without laterally projecting into the peripheral parting surface, production economies are obtained. There is no flashing which must be removed because the materials do not significantly enter the peripheral parting surface, or line, of the mold during molding.

Referring now to FIGS. 6-11, another embodiment of the invention is illustrated wherein a thigh pad 48 conventionally used with football equipment is fabricated. The thigh pad is generally illustrated in FIG. 9 and includes a somewhat centrally disposed recessed panel 64 and a slight annular collar 62. The thigh pad in transverse cross section is generally concave. Thigh pad 48 is formed from two preforms, best seen in FIG. 6, 50 and 52 respectively with the upper portions 54 of each of the preforms being somewhat larger than the lower, or bottom portions, 56 and the sides thereof gradually tapering from upper portion 54 to lower portions 56. Preforms 50 and 52 are each formed from a foamed cross-linked polyolefin and the specific materials of each preform may be the same or different. In addition to the preforms, an insert 58 is employed with the insert having disposed along its longitudinal dimension a plurality of downwardly protruding ribs 60. In transverse cross section, both through the main body portion of insert 58 and through ribs 60, the insert is upwardly concave. The preform, 50, which is

disposed upwardly of the upwardly concave insert generally will be of a slightly smaller area than will the lower preform, 52.

Preforms 50 and 52 are cut from a stock with a cutting die and also include rough edges 33. Insert 58 is generally formed of a rigid non-foamed material, preferably an organic polymer (such as, for example, polyvinyl chloride or the like) or a metal (like aluminum) and, obviously, adds strength and rigidity to the thigh pad. Outstanding results will be obtained using a rigid polyvinyl chloride insert, e.g. a curvilinear sheet with a thickness of about 1/16 to about 1/8 inch. Insert 58 becomes substantially totally enveloped and encapsulated between preforms 50 and 52 and preforms 50 and 52 in turn become tenaciously peripherally bonded to each other and, depending on its composition, to insert 58 during the molding operation generally illustrated in FIGS. 7, 8, 10 and 11.

The molds include partible mold halves, 66 and 68, which mold halves are pivotally mounted, as by rod 74, and can be closed and clamped by the clamping mechanism 76. The mold includes peripheral parting surfaces 70 and 72, respectively. The preforms and insert are such that preforms 50 and 52 are gently compressed within the mold cavity upon closing of the mold halves. The preforms are also substantially confined within the molding cavity without lateral projection into the mold parting surfaces, e.g. 70 and 72. This is best exemplified in FIGS. 10 and 11 where in it will be seen that upon first positioning the lower preform 52 into the partible mold 66 and then, overlaying, insert 58 thereon, followed by the positioning of preform 50 thereover, the insert and preforms

are confined within the article defining surfaces of the mold cavity and do not project laterally into the mold parting surfaces. Upon heating, small portions of preforms 50 and 52 may tend to creep into the mold parting surfaces, but if this happens the amount is so insignificant that virtually no unacceptable flashing forms and that the final article 48 still does not need to be trimmed. The closed mold with the insert and preforms are heated at a temperature for a time sufficient such that rough edges, like edges 33, can flow and form into the smooth arcuate edges 78 by contact with the smooth curved molding surfaces.

Because the preform or preforms, and optional inserts, are all positioned in a mold while the insert and preforms are at room temperature, there is little difficulty in positioning them in the proper place because they are not in a heated or sticky state when handled. This provides an improvement over the practices noted previously. This convenient indexing is itself a great benefit but it also appears that undesired air entrapment is also virtually eliminated.

It will be recalled that hip pad configurations were indicated to have a raised centrally located portion but because of the handling of heated panels it is expensive and difficult to form raised portions on the hip pad by inserting a material which is not the same as the material of the base portion. The difficulty in handling a tacky heated sheet stock insert is the cause of the problem. In accordance with the present invention, because the FXLPO materials are positioned within the mold at room temperature, this problem is obviated. The method provides an opportunity to easily form the raised portions of

a hip pad from a material which is not the same as the base material.

Based on the foregoing, it will be apparent that many options exist for taking advantage of the present invention. For example, and, although not shown, perhaps best appreciated by reference to the embodiment described with respect to FIG. 2, at least one of the preforms 29 and/or the insert 34 can be provided with perforate indicia so that upon closing of the mold, and molding by heating, foamed cross-linked polyolefin from a different preform can enter into the perforate indicia. This perforate indicia can take the form of any suitable opening, or openings, which defines lettering and/or a suitable design. The lettering obviously can be used for identification and/or advertising purposes. The design can similarly be a manufacturer's logo and function similarly. In this way, and especially in the case when different colors are shared in the preform and/or insert, the laminated configuration can provide an attractive identification and aesthetically appealing structure. Thus, for example, if it were desired to form, in accordance with FIG. 2, an article (other than a jaw pad or one needing insert 34) having some distinctive indicia thereon, preform 29 would have an opening or openings made through it. The opening(s) would, for example, be a name so that when molded FXLPO material from preform 28 would enter the openings and provide a contrasting indicia on the presurface of preform 29. Use of contrasting colors for preforms 29 and 28 provides an opportunity for many appealing structures.

In a like manner, insert 34 could be provided with perforate indicia (either with or without fastening means

36) so as to allow the adjacently downwardly FXLPO material from a preform 29 (or 28 depending on how many are used) to form the identification or design indicia by entering and generally heat bonding to the indicia defining surfaces.

While no vents are shown in the molds, it is generally preferred to provide appropriately arranged small vent holes. Additionally, in practicing this invention, it has been found that non-cross linked foamed polyolefins are generally not satisfactory for the present purposes because they contract and soften and flow when heated. Outstanding shock energy absorbing materials have been produced with materials indicated above and without the utilization of any polyurethane or foamed polyurethane or any precursors to a polyurethane or foamed polyurethane. Additionally it should be noted that tenacious teat bonding between FXLPO materials is effected without the necessity for dipping any of the preforms or inserts into organic peroxide solutions.

Having described the invention it will of course be apparent that modifications are possible which pursuant to the patent statutes and laws do not depart from the spirit and scope thereof.

What is claimed is:

1. A method for forming a soft, resilient, self-supporting, energy-dissipating article in a mold having particle mold portions, said mold, when in a closed position, defining an article forming cavity which includes a smooth arcuate edge and said mold having a peripheral parting surface, said method comprising: cutting sheet stock of foamed, cross-linked polyolefin into preforms

having a rough edge, said polyolefin being at least capable of being sufficiently thermoformed to allow a rough edge to be formed into a smooth edge, and said preforms, in plan view, having a peripheral configuration substantially corresponding to the peripheral shape of the cavity in plan peripheral view; at about room temperature, positioning a sufficient number of said preforms and, optionally at least one insert, into a mold portion so that upon closing and heating the mold said preform, or preforms, an optional insert are placed in compressive contact with the cavity and are substantially confined within said cavity without laterally projecting into said peripheral parting surface; heating a closed mold containing said preforms and optional insert for a sufficient period of time to allow said rough edge of said polyolefin to be formed into a smooth edge by contact with said smooth edge of said mold cavity and wherein, when plural preforms are used, and/or said optional insert is employed, said heating is done at a sufficient temperature for a sufficient time to form a bonded unitary article.

2. The method of claim 1, wherein a single preform is so positioned in said mold portion.

3. The method of claim 1 wherein at least two such preforms are so positioned.

4. The method of claim 1 where in at least one insert is positioned in a mold portion.

5. The method of claim 1 wherein said insert carries integral fastening means.

6. The method of claim 4 wherein said insert is a nonfoamed rigid organic polymer.

7. The method of claim 4 wherein said insert is a foamed, cross-linked polyolefin having a greater density than the density of said preform.

8. The method of claim 7 where in said preform has a density of about 2 to about 8 #/Ft^3 and said insert has a density in excess of about 4 #/Ft^3.

9. The method of claim 1 wherein said polyolefin is a closed cell polyethylene.

10. The method of claim 5 wherein said preform and said insert are generally C-shaped.

11. The method of claim 1 wherein said heating is also done for a sufficient period of time that the outwardly exposed surface of said preform becomes smoother.

12. A method for forming a solid self-supporting resilient cross-linked, foamed moldable polyolefin into a soft, energy-dissipating article in a mold having particle mold portions, said mold, when in a closed position defining an article forming cavity and having a peripheral parting surface, the method comprising: cutting stock of said polyolefin into preforms; at about room temperature positioning a sufficient number of said preforms, and, optionally, at least one insert, into said mold so that upon closing said mold and heating same, said mold cavity is filled with said sufficient number of preforms, and optional insert, but without either laterally extending into said peripheral parting surface; closing said mold and heating said closed mold containing said preforms, and optional insert, for a sufficient period of time for said preforms to conform to the adjacent mold

cavity and said optional insert, when present, to bond to an adjacent portion of at least one of said sufficient number of preforms and thereby form a bonded, single piece article, said method thereby producing an article which is substantially free of flashing.

13. The method of claim 12 where in said sufficient number of preforms is one.

14. The method of claim 12 where in said sufficient number of preforms, and said optional insert fill said mold cavity at about room temperature when said mold is closed and prior to said heating.

15. The method of claim 13 wherein an insert is positioned in said mold so as to be enveloped by at least two contacting preforms.

16. The method of claim 12 wherein at least one insert is employed, said insert having means thereon for fastening said insert and single piece article to a member carrying complementary means for interengageably fastening to said insert fastening means.

17. The method of claim 16 where said insert's fastening means comprises an orifice.

18. The method of claim 12 where in neither said optional insert of any of said sufficient number of preforms is formed of a polyurethane or a polyurethane forming precursor.

19. The method of claim 12 wherein (i) at least one of said number of preforms and/or said insert are provided with perforate indicia and wherein said perforate indicia carrying preform and/or insert are so positioned in said mold that upon closing said mold and heating,

foamed cross-linked polyolefin from a preform, enters into said perforate indicia.

20. The method of claim 19 wherein said foamed cross-linked polyolefin which enters said perforate indicia is of a color different than said preform and/or insert provided with said perforate indicia.

21. A method for molding a foamed cross-linked polyolefin in a mold having partible mold portions comprising positioning said foamed cross-linked polyolefin while substantially at about room temperature in a cavity portion of said mold, closing said partible mold portions and heating said mold and said polyolefin so as to mold and conform outer portions of said polyolefin to the surface of the mold cavity, the amount of polyolefin being such that during said heating substantially no polyolefin extends into the mating parting surfaces of the closed partible mold portions.

22. The method for forming a molded foamed cross-linked polyolefin article which is substantially free of flashing in a mold having partible mold halves which when closed define a cavity and a contiguous peripheral mold parting line comprising: positioning, while at substantially room temperature, foamed cross-linked polyolefin into a cavity portion of said mold; closing said mold; heating said mold for a sufficient period of time to form said article.

23. The method of claim 22 where in the amount of polyolefin material positioned in the mold is insufficient to substantially extend into said parting line upon closing said mold and heating.

* * *

United States Patent [19]

Nelson et al.

02/3/02A

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[54] METHOD OF FORMING A CROSS LINKED FOAMED POLYOLEFIN ARTICLE

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[*] Notice: The portion of the term of this patent subsequent to Dec. 25, 2007 has been disclaimed.

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Related U.S. Application Data

[60] Continuation of Ser. No. 541.588, Jun. 21, 1990, abandoned, which is a division of Ser. No. 180.824. Apr. 12, 1988. Pat. No. 4,930.110.

[51] Int. Cl. B29C 43/18; B29C 43/20

[52] U.S. Cl. 264/152; 264/153; 264/276; 264/308; 264/321; 264/331.17

[58] Field of Search 264/321, 308, 331.17, 264/153, 138, 276, 152

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[57] ABSTRACT

A method for forming soft, resilient, smooth, energy dissipating articles from foamed partially cross-linked polyolefins wherein sheet stock is cut into a preform and the preform while at room temperature is positioned within a mold cavity formed by partible mold halves. The preforms and the cavity of the molds are so arranged and constructed that after molding there is no flashing needing trimming because the polyolefin is substantially confined within the cavity without any lateral projection into the parting surfaces of the mold.

23 Claims, 4 Drawing Sheets

[Diagram Omitted]

METHOD OF FORMING A CROSS LINKED FOAMED POLYOLEFIN ARTICLE

This is a continuation of application Ser. No. 07/541,588, filed Jun. 21, 1990, now abandoned, which is a divisional of application Ser. No. 07/180,824, filed on Apr. 12, 1988, now U.S. Pat. No. 4,980,110.

TECHNICAL FIELD

The present invention relates to the manufacture of cushioning, or energy absorbing, materials such as, for example, that traditionally used in athletic equipment. Even more particularly the present invention relates to methods of molding a moldable, cross-linked, foamed polyolefin. The present invention is also directed to

methods for producing tenaciously bonded laminates of cross-linked closed-cell foamed polyolefin in which one of the laminate layers has a density different than the other laminate layer.

BACKGROUND ART

Articles have been manufactured in the past from foamed, cross-linked polyolefin wherein such articles were intended for use as shock absorbing, or cushioning members, in a wide variety of applications, including athletic equipment. Such members have been manufactured by others by a process wherein a panel, or sheet-stock, of foamed cross-linked polyolefin (FXLPO), particularly polyethylene, is heated to an elevated temperature and this preheated material then manually positioned within a mold in such manner that a peripheral portion is clamped and sealed in the parting line of complimentary partible mold elements. The material can be further heated and either vacuum molded or compression molded to a preselected shape. It will be appreciated that difficulty is encountered in handling such heated sheet stock because of the tacky, adhesive and cohexive nature of the heated FXLPO material. Quite commonly in manually handling the heated FXLPO panel, portions thereof stick together prior to proper positioning in the mold, hence resulting in a situation where an acceptable product can not be manufactured and material is wasted. Additionally, because of the clamping of the peripheral boundary of the panel in the mold parting line a great deal of waste flashing is created and must be removed. This, of course, uneconomically increases labor costs and material costs.The problems noted above are common in

forming various pads for sports and athletic equipment such as, for example, hip pads, thigh pads, and knew pads for football equipment. The laterally extending flashing problem in forming such pads is particularly troublesome from a labor and wasted material point of view. Present hip pad configurations for use with football equipment, generally have substantially raised, somewhat centrally located portions extending outwardly from a base portion. With the above-described manufacturing techniques currently employed, it is expensive to form such raised portions of a material which is not the same as the material of the base portion of the hip pad. That is, because of the difficulty in handling the tacky, hot sheet stock and the problem of accurately manually positioning, and indexing, a different material unto such a tacky material, such pads are unitarily formed from a single piece of sheet stock. It would be desirable to have a process wherein such hip pads could be formed with the raised portion and base portion being of different materials.

In manufacturing thigh pads by the above process there currently is a problem with regard to unacceptable entrapment of air during forming and also difficulty in properly indexing the components used to form these pads. Such thigh pads typically would be formed by first positioning a heated panel of cross-linked, foamed polyolefin in a mold portion, followed by positioning a rigid plastic insert upon the preheated panel. This, in turn, would then be followed by positioning another panel of heated, foamed, cross-linked polyolefin onto the plastic insert in a manner so as to both encapsulate the insert between the two panels, and join the panels at their

periperhy. The materials would then be peripherally clamped at a mold parting line. This technique, because of the adhesive nature of the heated panels, obviously creates an air entrapment problem if the air is not removed as the laminate is being built up. The removal of such air when handling the sticky, heated panels is indeed, a difficult task. The entrapped air then creates air pockets during molding, resulting in a product which could be unacceptable. Indexing is also quite difficult when one considers the sticky, adhesive and cohesive characteristics of the FXLPO which is being handled. Both of these problems contribute to poor quality, increased labor costs and increased wasted material.

Thus it will be seen that there is a need in the art for providing a process wherein products can be formed without encountering the undesired sticking problem which results when handling heated, foamed, cross-linked polyolefin. A process is also needed wherein the undesired formation of laterally extending flashing during the molding operation is virtually eliminated. A process is also needed wherein laminates can be formed such as, for example, thigh pads without encountering severe air entrapment problems between the various layers.

DISCLOSURE OF THE INVENTION

In accordance with the present invention an improved process is provided which satisfies the above indicated needs in the art.

In accordance with one feature of the present invention a process is provided for forming a soft resilient self-supporting energy-dissipating article in a mold having

partible mold portions, the mold when in a closed position, defining an article forming cavity which includes smooth arcuate edge and said mold having a peripheral parting surface, the process comprises: cutting sheet stock of foamed resilient cross-linked polyolefin into preforms inherently having a somewhat rough non-arcuate edge, said polyolefin being at least capable of being sufficiently thermoformed, or molded, to allow such edge to be formed into an arcuate smooth edge, and said preforms, in plan view, having in one embodiment a peripheral configuration, when in a relaxed condition, substantially corresponding to the peripheral shape of the cavity in plan peripheral view; at about room temperature positioning a sufficient number of said preforms and, optionally, at least one insert into a mold portion so that upon closing and heating the mold said preform or preforms and optional insert are placed in gentle compressive contact with the cavity and are substantially confined within said cavity without lateral projection into said peripheral parting surface; closing the mold and heating the closed mold for a sufficient period of time to allow said non-arcuate, rough edge of said polyolefin to be thermoformed (heat formed) into a smooth, arcuate edge by contact with the smooth arcuate edge of said mold cavity. When plural preforms are used and/or said optional insert is employed, the heating is sufficient to form a bonded unitary article.

In another embodiment, e.g. when the mold cavity is arcuate in plan view, the preform can be cut as a generally rectilinear member and the member bent when positioning in the mold as opposed to the previous

embodiment where it can be directly positioned in the mold cavity without significant bending.

In accordance with another feature of this invention an article of manufacture is provided which is a laminate comprised of a first portion of a foamed cross-linked polyolefin and a second portion of a foamed cross-linked polyolefin tenaciously bonded to said first portion, said second portion having a density greater than said first portion. In accordance with another feature of this invention, such laminate carries fastening means and is employed as a cushioning means, e.g. internally of protective headgear like the jaw pad in a football helmet.

In accordance with another feature of this invention there is provided a method for forming a sold self-supporting resilient cross-iinked, foamed moldable polyolefin into a soft, energy-dissipating article in a mold having partible mold portions, said mold, when in a closed position defining an article forming cavity and having a peripheral parting surface, the method comprising: cutting stock of said polyolefin into preforms; at about room temperature positioning a sufficient number of said preforms, and, optionally, at least one insert, into said mold so that upon closing said mold and heating same, said mold cavity is filled with said sufficient number of preforms, and optional insert, but without either, or any, laterally extending into said peripheral parting surface; closing said mold and heating said closed mold containing said preforms, and optional insert, for a sufficient period of time for said preforms to conform to the adjacent mold cavity and said optional insert, when present, to bond to an adjacent portion of at least one of said sufficient number of preforms and thereby form a

bonded, single piece article which is substantially free of flashing.

In accordance with another feature of this invention, a laminated article is provided comprising a first layer of foamed cross-linked polyolefin and a second layer of material overlaying said first layer of polyolefin, said second layer carrying perforate indicia and a portion of said first layer extending into said perforate indicia of said second layer. When different colored layers are employed the configuration can provide attractive identification and aesthetic appeal.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will become more apparent by reference to the drawings wherein:

FIG. 1 illustrates the cutting of sheet stock into preforms;

FIG. 2 illustrates a mold, preforms and an insert which are used in accordance with the method of this invention;

FIG. 3 is a three dimensional representation of one of the products formed in accordance with the present invention;

FIG. 4 is a three dimensional representation of a protective head gear which is provided with the article shown in FIG. 3;

FIG. 5 is a sectional view taken along the line 5 – 5 of FIG. 4;

FIG. 6 illustrates the preforms and an insert employed in accordance with the present invention to form a thigh pad;

FIG. 7 is a three dimensional representation of a mold used to form such a thigh pad;

FIG. 8 shows the mold of FIG. 7 in a closed position and containing the preforms and insert of FIG. 6;

FIG. 9 is a three dimensional representation of a thigh pad formed in accordance with the present invention;

FIG. 10 is a sectional view taken along the line 10 – 10 of FIG. 8 and shows a thigh pad being molded;

FIG. 11 is a sectional view taken along the line 11 – 11 of FIG. 8 also showing the molding of a thigh pad.

DETAILED DESCRIPTION OF THE INVENTION

As previously indicated the present invention contemplates the use of the foamed cross-linked polyolefin (FXLPO) material in the form of a sheet or bun-stock. Such materials are readily commercially available and are supplied by Dynamit Nobel of America, Inc. under the Trademark Trocellen, and by Monarch Robber Co., under their designation Evalite. The polyolefins can be homopolymers of ethylene or homopolymers of propylene and/or copolymers of ethylene and/or propylene with copolymerizable monoolefinically unsaturated monomers such as, for example, vinyl acetate. One such copolymer which is widely commercially available is a copolymer of ethylene and vinyl acetate, typically with up to about 30% by weight of vinyl acetate as the comonomer. These materials are cross-linked by irradiation or by the use of

chemical cross-linking agents such as the peroxides and hydroperoxides. Foaming is accomplished by using any of many well-known chemical or physical foaming agents. The (FXLPO) materials contemplated for use in the present invention obviously are not cross-linked to the extent that they are no longer formable. That is, the materials employed should only be partially cross-linked and the cross-linking should allow for the materials to be put into a mold and possess sufficient moldability, or deformability, when heated so that at least a rough cut edge can conform (flow of deform) to a smooth arcute surface of the mold, whereby an article can be formed which has smooth edges rather than rough cut edges. These materials generally have high heat resistance, good fatigue resistance and good resistance to a wide variety of environmental conditions. In general the densities of the foamed cross-linked polyolefins (FXLPO) employed can vary over a wide range. Quite outstanding results will be obtained using materials having densities in the range of about 2 to about 10 or 12 pounds per cubic foot.

Referring to FIGS. 1-5, sheet stock 26 of the FXLPO material is first cut, for example using a die cutter 22, to form preforms 28. Molding of a preform, or a plurality of preforms either with or without the use of an insert, is effected by the use of metallic partible molds, respectively 10 and 12. Partible mold portion 12 includes an article forming cavity 18, which as seen in FIG. 2, is generally arcuate, or C-shaped, in plan view. Cavity 18 is so formed that its lower edges 20 are smooth and rounded so as to produce a more comfortable and aesthetically appealing product. When in a closed position the peripheral parting surfaces 14 and 16 of the mold are

brought into intimate contact with each other. Partible mold portion 10 is provided with an inwardly (or downwardly) projecting molding surface 21 which upon closing snugly nests within cavity 18 and defines an article molding surface.

At least one preform 28 is employed which, in plan view, has a peripheral configuration substantially corresponding to the peripheral shape of cavity 18 in plan view. That is both cavity 18 and preform 28 are substantially the same in plan peripheral view. Alternatively, however, a preform can be cut which is generally a rectilinear preform 30 by use of a suitable cutting die 24. When a rectilinear member 30 is employed, it will need to be bent before it can be positioned within mold cavity 18. This is in contrast to the use of the C-shaped preform 28 which may be substantially directly placed within cavity 18. In either case, however, because of the cutting operation, the preforms are generally provided with rough cut edges 32. Of course, for aesthetic purposes and comfort when used in contact with the skin, these rough edges need to be formed into smooth rounded edges in the mold.

In referring to FIG. 2 alternate options of the present invention become apparent. In FIG. 2 plural preforms are employed, namely a preform 28 and a preform 29 which generally is of lesser thickness. These preforms obviously can be tailored for preselected end uses by using FXLPO materials which have different densities. When different densities are not desired a single preform 28 may be employed.

FIG. 2 also illustrates the optional use of a insert 34 which integrally carries suitable fastening means 36. Fastening means 36 can be any of a numerous variety of available fasteners, including metallic fasteners having orifices for snapping engagement with complementary fastening means on another article, or the fastening means can be Velcro material. There may, of course, be no need to employ any insert or an insert which carries fastening means depending on the desired end use.

In the embodiment set forth in FIG. 3, a soft, resilient, self-supporting energy dissipating jaw pad 42, which will be employed inside of protective head gear such as, for example, football helmet 38 is illustrated. Such a pad needs to possess optional insert 34 which carries appropriate fastening means 36. Generally, insert 34 may be of any convenient material depending on the ultimate use including plastics (both thermoplastic and thermoset) or metals, for example aluminum, and paperboard. The insert can also be a reinforcing mat such as a glass fiber reinforcing mat or a polymeric reinforcing mat such as a polythylene terephthalate fibrous mat. The insert may, or may not, include the integral fastening means 36 depending on the ultimate product use. The insert may take the form of a sheet, either curvilinear or planar, a film or a fabric, either woven or non-woven. Outstanding products have been produced in accordance with this invention by using inserts whose resistance to flexure has been greater than that of the FXLPO material used for the preform(s), i.e. the insert generally will be less elastic or more rigid. For the jaw pad example, the insert may be a polyolefin, preferably a cross-linked polyolefin and most desirably a foamed cross-linked polyolefin but one which has

slighter greater density than the preform 28, and optional preform 29.

Preform 28 is positioned within cavity 18, and is overlayed with optional preform 29. Insert 34 is then positioned, or overlayed, on top of preform 29. Partible mold 10 is then brought into contact with the lower partible mold portion 12. The article defining molding surface of the formed cavity (including the snugly nesting molding surface 21) and the preform, or preforms, and optional insert, are selected so that upon closing the mold, preform 28, or optional preform 29 and the optional insert 34 are placed in gentle compressive contact with the cavity. Additionally, whether a single preform is used or plural preforms, either with or without an insert, the gently compressed material to be molded and/or bonded is within the article defining surfaces of the mold and are substantially confined within the mold and its cavity forming surface without laterally projecting into the peripheral parting surfaces 14 and 16 of mold halves 10 and 12.

The closed mold containing the molding materials 28, 29, 34 is then heated in any convenient manner such as, for example, in an air heated oven. The molds can also be heated by putting them in contact with any suitable heat transfer medium or for that matter designing the molds to allow the passage of a heat transfer medium therethrough. As previously indicated, it is generally desired to convert rough cut edges 32 to a smooth curved arcuate edge 33 by molding the rough cut edge 32 in contact with the smooth edge 20 of the cavity 18. Consequently, the mold and materials to be molded, are heated to a temperature and for a time at least sufficient to effect that

objective, that is for the rough edge to be molded and formed into a curved smooth edge. Typically, the heating is done at a temperature in the range of about 250° F, to about 500° F, for about 1 to about 20 minutes. During such heating not only are rough edges converted to smooth edges but in general the entire preform 28 takes on the configuration of the molding surfaces and results in the production of a much smoother aesthetically pleasing article.

After cooling, final article 42 is removed from the mold. This article, which is represented in the form of a C-shaped member, is employed inside of protective headgear like football helmet 38, as a safety and energy absorbing member. Headgear 38 includes a rigid protective shell 40 of a suitable polymeric material and the article 42 is disposed internally of shell 40 as a jaw pad. The jaw pad 42 is attached to the shell 40 by suitable inter-engaging fastening means, generally designated 44, one part 46 of which is carried by the shell 40 and the other part 36 of which is carried by jaw pad 42. The fastening means 44 can best be seen in FIG. 5 which shows the attachment of jaw pad 42 to shell 40 by the inter-engaging fastening means 46 and 36, respectively. In the preferred embodiment the fastening means 44 will be conventional metallic snap fasteners.

Thus from the above it will be apparent that the present method provides a technique whereby a variety of FXLPO materials, e.g. of varying densities, can be tenaciously heat bonded to each other and/or molded into finished articles having smooth surfaces. By properly selecting at least one preform (or a plurality of preforms) either with or without an insert, to fill the cavity so that

the preform, or preforms and optional insert are placed in gentle compressive contact with the molding surfaces but are confined within the cavity and without laterally projecting into the peripheral parting surface, production economies are obtained. There is no flashing which must be removed because the materials do not significantly enter the peripheral parting surface, or line, of the mold during molding.

Referring now to FIGS. 6-11, another embodiment of the invention is illustrated wherein a thigh pad 48 conventionally used with football equipment is fabricated. The thigh pad is generally illustrated in FIG. 9 and includes a somewhat centrally disposed recessed panel 64 and a slight annular collar 62. The thigh pad in transverse cross section is generally concave. Thigh pad 48 is formed from two preforms, best seen in FIG. 6, 50 and 52 respectively with the upper portions 54 of each of the preforms being somewhat larger than the lower, or bottom portions, 56 and the sides thereof gradually tapering from upper portion 54 to lower portions 56. Preforms 50 and 52 are each formed from a foamed cross-linked polyolefin and the specific materials of each preform may be the same or different. In addition to the preforms, an insert 58 is employed with the insert having disposed along its longitudinal dimension a plurality of downwardly protruding ribs 60. In transverse cross section, both through the main body portion of insert 58 and through ribs 60, the insert is upwardly concave. The preform, 50, which is disposed upwardly of the upwardly concave insert generally will be of a slightly smaller area than will the lower preform, 52.

Preforms 50 and 52 are cut from a stock with a cutting die and also include rough edges 33. Insert 58 is generally formed of a rigid non-foamed material, preferably an organic polymer (such as, for example, polyvinyl chloride or the like) or a metal (like aluminum) and, obviously, adds strength and rigidity to the thigh pad. Outstanding results will be obtained using a rigid polyvinyl chloride insert, e.g. a curvilinear sheet with a thickness of about 1/16 to about 1/2 inch. Insert 58 becomes substantially totally enveloped and encapsulated between preforms 50 and 52 and preforms 50 and 52 in turn become tenaciously peripherally bonded to each other and, depending on its composition, to insert 58 during the molding operation generally illustrated in FIGS. 7, 8, 10 and 11.

The molds include partible mold halves, 66 and 68, which mold halves are pivotally mounted, as by rod 74, and can be closed and clamped by the clamping mechanism 76. The mold includes peripheral parting surfaces 70 and 72, respectively. The preforms and insert are such that preforms 50 and 52 are gently compressed within the mold cavity upon closing of the mold halves. The preforms are also substantially confined within the molding cavity without lateral projection into the mold parting surfaces, e.g. 70 and 72. This is best exemplified in FIGS. 10 and 11 wherein it will be seen that upon first positioning the lower preform 52 into the partible mold 66 and then, overlaying, insert 58 thereon, followed by the positioning of preform 50 thereover, the insert and preforms are confined within the article defining surfaces of the mold cavity and do not project laterally into the mold

parting surfaces. Upon heating, small portions of preforms 50 and 52 may tend to creep into the mold parting surfaces, but if this happens the amount is so insignificant that virtually no unacceptable flashing forms and that the final article 48 still does not need to be trimmed. The closed mold with the insert and preforms are heated at a temperature for a time sufficient such that rough edges, like edges 33, can flow and form into the smooth arcuate edges 78 by contact with the smooth curved molding surfaces.

Because the preform or preforms, and optional inserts, are all positioned in a mold while the insert and preforms are at room temperature there is little difficulty in positioning them in the proper place because they are not in a heated or sticky state when handled. This provides an improvement over the practices noted previously. This convenient indexing is itself a great benefit but it also appears that undesired air entrapment is also virtually eliminated.

It will be recalled that hip pad configurations were indicated to have a raised centrally located portion but because of the handling of heated panels it is expensive and difficult to form raised portions on the hip pad by inserting a material which is not the same as the material of the base portion. The difficulty in handling a tacky heated sheet stock insert is the cause of the problem. In accordance with the present invention, because the FXLPO materials are positioned within the mold at room temperature, this problem is oviated. The method provides an opportunity to easily form the raised portions of a hip pad from a material which is not the same as the base material.

Based on the foregoing, it will be apparent that many options exist for taking advantage of the present invention. For example, and, although not shown, perhaps best appreciated by reference to the embodiment described with respect to FIG. 2, at least one of the preforms 29 and/or the insert 34 can be provided with perforate indicia so that upon closing of the mold, and molding by heating, foamed cross-linked polyolefin from a different preform can enter into the perforate indicia. This perforate indicia can take the form of any suitable opening, or openings, which defines lettering and/or a suitable design. The lettering obviously can be used for identification and/or advertising purposes. The design can similarly be a manufacturer's logo and function similarly. In this way, and especially in the cast when different colors are used in the preform and/or insert, the laminated configuration can provide an attractive identification and aesthetically appealing structure. Thus, for example, if it were desired to form, in accordance with FIG. 2, an article (other than a jaw pad or one needing insert 34) having some distinctive indicia thereon, preform 29 would have an opening or openings made through it. The opening(s) would, for example, be a name so that when molded FXLPO material from preform 28 would enter the openings and provide a contrasting indicia on the upper surface of preform 29. Use of contrasting colors for preforms 29 and 28 provides an opportunity for many appealing structures.

In a like manner, insert 34 could be provided with perforate indicia (either with or without fastening means 36) so as to allow the adjacently downwardly FXLPO material from a preform 29 (or 28 depending on how

many are used) to form the identification or design indicia by entering and generally heat bonding to the indicia defining surfaces.

While no vents are shown in the molds, it is generally preferred to provide appropriately arranged small vent holes. Additionally, in practicing this invention, it has been found that non-cross linked foamed polyolefins are generally not satisfactory for the present purposes because they contract and soften and flow when heated. Outstanding shock energy absorbing materials have been produced with materials indicated above and without the utilization of any polyurethane or foamed polyurethane or any precursors to a polyurethane or foamed polyurethane. Additionally it should be noted that tenacious heat bonding between FXLPO materials is effected without the necessity for dipping any of the preforms or inserts into organic peroxide solutions.

Having described the invention it will of course be apparent that modifications are possible which pursuant to the patent statutes and laws do not depart from the spirit and scope thereof.

What is claimed is:

1. A method for forming a foamed, cross-linked polyolefin into an article in a mold having partible mold portions, said mold, when in a closed position, defining an article forming cavity which includes a smooth arcuate edge and said mold having a peripheral parting surface, said method comprising the steps of: cutting sheet stock of foamed, cross-linked polyolefin into a preform having a rough edge, said polyolefin being at least capable of being sufficiently thermoformed to allow a rough edge to

be formed into a smooth edge, and said preform, in plan view, having a peripheral configuration substantially corresponding to the peripheral shape of the cavity in plan peripheral view: positioning said preform, below the temperature at which said preform is rendered tacky or sticky, into a mold portion so that, upon closing and heating the mold, said preform is placed in compressive contact with the cavity and is substantially confined within said cavity without laterally projecting into said peripheral parting surface; and heating a closed mold containing said preform for a sufficient period of time to allow said rough edge of said polyolefin to be formed into a smooth edge by contact with said smooth edge of said mold cavity.

2. The method of claim 1, further comprising the step of positioning an insert into a mold portion, wherein said heating step is done at a sufficient temperature and for a sufficient time to form a bonded unitary article.

3. The method of claim 1, further comprising the steps of positioning more than one preform into a mold portion, wherein said heating is done at a sufficient temperature and for a sufficient time to form a bonded unitary article.

4. The method of claim 3 further comprising the step of positioning an insert into a mold portion, wherein said heating step is done at a sufficient temperature and for a sufficient time to form a bonded unitary article.

5. The method of claim 4, wherein said insert carries integral fastening means.

6. The method of claim 4, wherein said insert is a nonfoamed rigid organic polymer.

7. The method of claim 4, wherein said insert is a foamed, cross-linked polyolefin having a greater density than the density of said preform.

8. The method of claim 7, wherein said preform has a density of about 2 to about 8 lb./ft^3 and said insert has a density in excess of about 4 lb./ft^3.

9. The method of claim 4, wherein said preform and said insert are generally C-shaped.

10. The method of claim 1, wherein said polyolefin is a closed cell polyethylene.

11. A method for forming a foamed, cross-linked polyolefin into an article in a mold having partible mold portions, said mold, when in a closed position, defining an article forming cavity and having a peripheral parting surface, the method comprising the steps of cutting stock of said polyolefin into a preform; positioning said preform, below the temperature at which said preform is rendered tacky or sticky into said mold so that, upon closing said mold and heating, same, said mold cavity is filled with said preform but said preform does not laterally extend into said peripheral parting surface; and closing said mold and heating said closed mold containing said preform for a sufficient period of time for said perform to conform to the adjacent mold cavity.

12. The method of claim 11, further comprising the step of positioning an insert into a mold portion, wherein said heating step is done at a sufficient temperature and for a sufficient time to form a bonded unitary article.

13. The method of claim 11, further comprising the step of positioning more than one preform it no [sic] a mold portion wherein said heating is done at a sufficient temperature for a sufficient time to form a bonded unitary article.

14. The method of claims 13, further comprising the step of positioning an insert into a mold portion, wherein said heating step is done at a sufficient temperature and for a sufficient time to form a bonded unitary article.

15. The method of claim 14, wherein said insert carries integral fastening means.

16. The method of claim 14, wherein said insert is a nonfoamed rigid organic polymer.

17. The method of claim 14, wherein said insert is a foamed, cross-linked polyolefin having a greater density than the density of said preform.

18. The method of claim 17, wherein said preform has a density of about 2 to about 8 lb./ft^3 and said insert has a density in excess of about 4 lb./ft^3.

19. The method of claim 14, wherein said preform and said insert are generally C-shaped.

20. The method of claim 11, wherein said polyolefin is a closed cell polyethylene.

21. A method for molding a foamed cross-linked polyolefin in a mold having partible mold portions comprising the steps of: positioning said foamed cross-linked polyolefin, below the temperature at which said polyolefin is rendered tacky or sticky, in a cavity portion of

said mold; closing said partible mold portions; and heating said mold and said polyolefin so as to mold and conform outer portions of said polyolefin to the surface of the mold cavity; the amount of polyolefin being such that, during said heating step, substantially no polyolefin extends into the mating parting surfaces of the closed partible mold portions.

22. A method for forming a molded, foamed, cross-linked polyolefin article which is substantially free of flashing in a mold having partible mold halves which, when closed, define a cavity and a contiguous peripheral mold parting line, said method comprising the steps of: positioning formed cross-linked polyolefin, below the temperature at which said polyolefin is rendered tacky or sticky, into a cavity portion of said mold; closing said mold; and heating said mold for a sufficient period of time to form said article.

23. The method of claim 22, wherein the amount of polyolefin material positioned in the mold is insufficient to substantially extend into said parting line upon closing said mold and heating.

* * *

United States Patent [19] [11] **Patent Number**: 4,524,037

Marc [45] **Date of Patent**: Jun. 18, 1985

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[54] METHOD AND APPARATUS FOR FORMING A FLEXIBLE THERMOPLASTIC RESIN FOAM ARTICLE USING AN RF FIELD

[76] Inventor: Michel Marc, 48 Ridge Hill Farm Rd., Wellesley, Mass. 02181

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[52] U.S. Cl. ...264/26; 264/321; 425/174.8 E; 425/398; 425/817 R

[58] Field of Search..... 264/26, 321; 425/817 R, 425/174.8 E, 398

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Primary Examiner – Philip Anderson
Attorney, Agent, or Firm – Wolf, Greenfield & Sacks

[57] ABSTRACT

A process and associated apparatus for forming a foam plastic article using a mold with a mold cavity and a pair of electrodes across which an RF field may be impressed. The foam material that is to be processed is inserted into the mold and is then compressed. The compression may be at least on the ratio of 2 to 1 and perhaps as high or higher than 8:1. An RF heating field is applied while maintaining the foam material compressed and after the heat is terminated, the foam material is permitted to expand to conform to a mold shape as the material cools. This pre-compression step enables substantial reduction in processing time.

15 Claims, 4 Drawing Figures

[Diagram Omitted]

METHOD AND APPARATUS FOR FORMING A FLEXIBLE THERMOPLASTIC RESIN FOAM ARTICLE USING AN RF FIELD

BACKGROUND AND SUMMARY OF THE INVENTION

The present invention relates in general to an RF heating process and associated apparatus. More particularly, the present invention relates to an RF heating process employed in the making or forming of molded plastic parts or pieces, particularly items made of plastic foams such as polyethelene or polyproplene foam.

The present technique for forming foam articles is illustrated in FIG. 1 herein in which there is schematically illustrated a mold 10 having a cavity for receiving the unprocessed foam block 12. Herein, for the sake of simplicity, the article being manufactured is simply of cubic

form. However, it is understood that both the prior art technique and the technique of the present invention may be used in forming varied size and shape articles.

Associated with the mold 10 which may be of silicone rubber, are a pair of electrodes 14 and 16. The electrode 14 may be a movable electrode while the electrode 16 may be fixed. FIG. 1 schematically illustrates an RF source 18 coupling across the electrodes 12 and 14. FIG. 1 illustrates the foam block 12 having been inserted into the mold with the electrodes then moved to the position shown in FIG. 1. The RF field is then applied by source 18 to cause heating of the foam for the purpose of curing it and forming it into the desired shape. The foam is preferrably free-formed prior to insertion into the mold and has a shape that already substantially conforms to the shape of the mold. When the electrodes 14 and 16 are closed so as to ready the apparatus for heating, there may be a slight compression of the foam block 12. However, the prior art technique has never taught any substantial compression of the foam, particularly the art has not shown compression of the foam for the purpose of substantially reducing the heating and curing time thereof.

In the arrangement illustrated in FIG. 1 the typical heating time which represents some portion of the overall manufacturing cycle time, is typically in the order of about five minutes. It is over this five minute interval that RF energy is applied for heating. The mold is preferably constructed so as to have a high dielectric constant so that as much heat as possible is dissipated in the material that is being formed with less material being dissipated in the mold itself.

It is an object of the present invention to provide an improved RF heating process and associated apparatus in which the article can be formed over a heating period that is of substantially reduced duration. In accordance with the present invention it has been found that the heating period can be reduced from the afore mentioned typical five minute interval to on the order of 1½ minutes. This is accomplished in accordance with the present invention by an RF heating process which combines RF heating with the use of a pair of electrodes, in combination with, substantial compression of the foam material with the foam material being maintained compressed during the heating cycle when the RF energy is applied. It has been found that by carrying out this compression while applying RF energy, that the heating time can be substantially reduced. After the heating cycle is over the previously compressed foam is permitted to expand as it cools and it then conforms to the desired over all hold shape.

In accordance with the apparatus of the present invention, in order to provide the aforementioned compression of the foam material, there may be provided a plug or the like. This plug can also be constructed of silicone rubber preferably loaded to have a high dielectric constant. This plug is temporarily used for compression of foam and is maintained in use during the heating cycle. The plug is then removed to enable expansion of the foam into its desired final shape.

BRIEF DESCRIPTION OF THE DRAWING

Numerous other objects, features and advantages of the invention should now become apparent upon the reading of the following detailed description taken in conjunction with the accompanying drawing, in which:

FIG. 1 is a prior art diagram showing the technique for forming foam articles with RF energy;

FIG. 2 is an exploded view of the RF heating process of the present invention showing an initial step of the process wherein the foam is in the cavity and the plug is about to be inserted;

FIG. 3 is a further schematic cross sectional view showing the compressing phase of the invention with the plug being used in combination with the upper electrode for compressing the foam material during the heating phase;

FIG. 4 shows a cross sectional view of the same mold after the steps of FIGS. 2 and 3 with the foam material simply being permitted to expand to the proper mold shape with the plug having been removed.

DETAILED DESCRIPTION

FIG. 1 has been described previously in connection with the discussion of the prior art arrangement of employing RF heating in the construction of foam articles or items. FIGS. 2-4 are sequential schematic cross sectional views showing the steps in carrying out the process of the present invention. In the prior art arrangement the heating period that is necessary in order to properly form the part is on the order of about five minutes. With the

technique of the present invention exemplified in FIGS. 2-4 this heating period is then reduced substantially to on the order of 1-1.5 minutes. It is understood that the heating period is followed by a cooling period in which the electrodes are cooled preferably by a liquid cooling technique. A production machine typically has a single heating station and may have multiple cooling stations.

In FIGS. 2-4 there is shown an upper electrode 20 and a lower electrode 22. The mold is shown in the form of a silicone rubber mold 24. An RF source 26 connects between the electrodes 20 and 22. In addition to the mold 24 there is also provided a plug 28 used in the process of the present invention. The plug 28 may also be constructed of a silicone rubber material preferably loaded so as to have a high dielectric constant.

FIG. 2 shows the mold 24, the electrodes 20 and 22, and the plug 28. Also shown in FIG. 2 is the uncompressed foam material 30 which is made of a shape that substantially conforms to the shape of the cavity in the mold 24. In FIG. 2 the distance a may be on the order of about 1 inch. Foam material 30 already has been prepared in a conventional manner known to those skilled in the art, such as by the use of an additive, or by treating the material, to render foam material 30 suitable for RF heating. Examples of such known methods of preparing foam material 30 are shown in the following U.S. Pat. Nos.: 3,640,913; 3,243,485; 3,242,238; 3,010,157; and 3,331,899.

FIG. 3 shows the next step in the process in which the foam material 30 has been compressed to a dimension b on the order of 1/8 inch. There is thus an 8 to 1 compression ratio. This ratio is preferably at least 2 to 1. It is also

noted in FIG. 3 that this compression is carried out by means of the plug 28 which has moved in the direction of the arrow 32. The electrode 20 overlies the plug and the top surface of the mold 24. While the apparatus is in the position shown in FIG. 3 the RF generator 26 is energized and RF heating is applied between the electrodes 20 and 22. The majority of this heat is dissipated in the foam material and because of the compression thereof it has been found that the heating cycle can be reduced substantially which greatly enhances the desirability and flexibility of the present process. After the heating cycle has terminated, the plug is removed as indicated in FIG. 4 and the foam material 30 is simply permitted to expand so as to fill the mold cavity. In the embodiment illustrated herein the top electrode 20 in a sense forms one side of the mold cavity. In other arrangements a further dielectric material could be used in association with the top electrode for forming one side of the mold cavity.

Having described one embodiment of the present invention it should now be apparent to those skilled in the art that numerous other embodiments are contemplated as following within the scope of this invention. For example there has been illustrated herein particularly in FIGS. 2-4 one embodiment of an item that is being constructed. Obviously, many different sizes, shapes and configurations of an item can be formed. Also, inner surfaces of the mold cavity may be in the form of an imprint which is desired to be made on one or more surfaces of the part being molded. Also, there has been described herein the use of plastic foam materials such as polyethelene or polyproplene foams. Also, other types of thermal forming plastic foam material placed in the mold

one can also use a liquid plastic such as plastisol with a blowing agent to provide the end product foam.

What is claimed is:

1. A process of forming a flexible, thermoplastic foam article using a mold with a mold cavity, a pair of electrodes across which an RF field may be impressed and compressing means, said process comprising the steps of:

inserting a preform of the foam material into the mold;

compressing the foam material with the compressing means;

applying an RF heating field while maintaining the foam material compressed to heat the foam material to a temperature below the temperature at which the foam material would become permanently deformed into its compressed state;

withdrawing the compressing means; and

permitting the foam material to expand to conform to and in substance fill said mold cavity as the material cools to cause the foam material to permanently deform to assume the general shape and size of the mold cavity.

2. A process as set forth in claim 1 wherein said foam material is compressed by a compression ratio of at least 2 to 1.

3. A process as set forth in claim 1 wherein said foam material is compressed by a compression ratio of about 8 to 1.

4. A process as set forth in claim 1 including providing a plug to compress the foam.

5. A process as set forth in claim 4 including inserting the foam in a pre-formed shape substantially initially matching the shape of the mold.

6. A process as set forth in claim 5 wherein the step of compressing the foam is carried out by inserting the pre-formed foam into the mold and then compressing it by inserting the plug over the foam and into the mold.

7. A process as set forth in claim 6 wherein the plug compresses the foam in the ratio of at least 2 to 1.

8. An apparatus for forming a flexible, thermoplastic foam article comprising:

a mold having a predetermined shape and size mold cavity;

a pair of electrodes, one on each side of the mold;

means for compressing a preform of the foam material in the mold cavity from a condition in which the foam material in substance fills said mold cavity, to a condition in which the foam material fills only a fraction of the volume of the mold cavity; and

means for applying an RF heating field across the pair of electrodes while maintaining the foam material compressed over a heating period to heat the foam material to a temperature below the temperature at which the foam material would become permanently deformed into its compressed state; and

means for withdrawing said compressing means to permit said foam material to expand after termination of the heating period to allow it to conform to and in substance fill said mold cavity as the material cools, the foam material being permanently deformed to assume the general shape and size of the mold cavity.

9. An apparatus for forming a foam plastic article as defined in claim 8 wherein said foam material is polyethylene foam.

10. An apparatus for forming a foam plastic article as defined in claim 8 wherein said foam material is polypropolene foam.

11. An apparatus for forming a foam plastic article as defined in claim 8 wherein said means for compressing includes a plug.

12. An apparatus for forming a foam plastic article as defined in claim 11 wherein either or both said mold cavity and plug have an imprint surface.

13. An apparatus as set forth in claim 11 wherein said plug fits into said mold over said foam.

14. An apparatus for forming a foam plastic article as defined in claim 8 wherein the foam material is ethylenevinylacetate.

15. An apparatus for forming a foam plastic article as defined in claim 8 wherein the foam material is polyvinylchloride.

* * *

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF OHIO
WESTERN DIVISION

OHIO CELLULAR PRODUCTS CORPORATION,	)	
Plaintiff,	)	No. 94-CV-7251
vs.	)	Hon. David A. Katz
ADAMS USA, INC.,	)	
Defendant.	)	

* * *

Deposition of Donald Nelson December 19, 1994

[p. 5] Q. Are you an architect?

A. No.

Q. Any graduate school background?

A. None.

Q. What's your occupation?

A. I'm president of Ohio Cellular Products.

Q. What is the nature of its business?

A. We're a manufacturer of cross-linked polyethylene foam products. XLPE is a good way of abbreviating cross-linked polyethylene.

Q. Does it engage in any other business?

A. No.

Q. What's the ownership of Ohio Cellular?

A. I own 100 percent.

Q. Who supervises the manufacturing performed by Ohio Cellular?

A. Presently it's Kurt Fink.

Q. With a C or a K?

A. K.

Q. Where is Ohio Cellular located?

A. 9610 County Road 14, Wauseon, Ohio, 43567.

Q. Do you know where Mr. Fink resides?

A. In Adrian, Michigan.

Q. Where is Ohio Cellular's manufacturing

* * *

[p. 39] Q. Heat the foam by radio frequency –

A. They're not heating the foam, you're just changing the molecular structure of the foam. The radio frequency changes the molecules on it.

Q. How long have you been aware of FoamAid's experimentation with that technology?

A. Since 1984. Or approximately '84. It could have been a year or two later, I'm not really –

Q. But during the period which you –

A. During the period I was involved, right, I knew they –

Q. Do you know what the source of that technology was?

A. They were licensing it through Voltek.

Q. Are you aware of any patents that were involved?

A. No. Yes, excuse me. Yes, there were patents involved, and that's why they didn't let anybody see the process and it was done on a very closed state.

Q. What was your understanding of who the patentee was?

A. Someone that Voltek had licensed the patent from, and Voltek was trying to sell this technique process to all of their license – their distributed fabricators.

* * *

[p. 79] K-l-i-n-t?

A. Yes.

Q. What's your understanding of the process they utilize?

A. Radio frequency.

Q. And the steps of their process?

A. I don't exactly know the steps of their process. I'm not aware of – I've never been there.

Q. Well, how did you become familiar with that company or aware of that company?

A. By being furnished their patents.

Q. Do you recall which patents you were furnished?

A. No.

Q. Do you recall when they were furnished to you?

A. Yeah, roughly two years ago.

Q. Okay. Do you recall why or how that came about?

A. It was furnished to me as a result of a letter from Mr. Purdue or the Purdue office from Mr. Lammy on not signing our second patent application.

Q. What's your recollection of what those patents showed?

A. Radio frequency waves were used in a silicone mold with the foam in the mold under compression.

[p. 80] Q. The foam precut?

A. Yes.

Q. Placed in the mold?

A. Yes.

Q. Compression molding did you say?

A. It was – I believe it does say it's under compression, yes. I've never seen the process used so I'm not sure.

Q. Are you aware of any flow molding process utilized by Klint?

A. No.

Q. Again, what's the term "flow molding" mean to you?

A. That means nothing to me. That's a name that he made up probably. I don't know what flow molding is.

Q. Injection molding perhaps? Does that mean anything to you?

A. There is – there is cross-linked foam that is using an injection molding process.

Q. What's your understanding of that process in general?

A. My understanding of that process is it's not being done in the United States at all. If that's what your reference to flow molding. I don't –

[p. 81] Q. You're familiar with Voltek –

A. Yes.

Q. – is that correct? What's your understanding of the nature of their business?

A. Manufacturers of cross-linked polyethylene foam.

Q. Do they do any forming or just the bulk foam manufacturing?

A. Bulk foam manufacturing to my understanding.

Q. I believe you testified earlier that you were aware of them having the license to utilize a specific process for forming products?

A. Correct, uh-huh.

Q. What's your recollection of which process that was?

A. The radio frequency molding.

Q. How did you became [sic] aware of that license again?

A. During – through my association with FoamAid.

Q. When FoamAid was experimenting with the RF process?

A. Yes.

Q. You thought that was about '84 or so?

A. Yes.

Q. Again, what's your recollection of that [p. 82] process?

A. The radio frequency waves – the foam is put into a silicone mold and then it's hit with radio frequency electrodes on the top and the bottom of the mold.

Q. Foam is precut, placed in the mold?

A. Right.

Q. Placed under pressure in the mold?

A. Right.

Q. And RF supplied.

A. RF in a special radio frequency machine.

Q. What does the term "mated mold" mean to you if anything?

A. They got married. It's a married mold, it's two pieces together so that it fits.

Q. Male, female members?

A. No, not necessarily, no, sir. It can be both female type molds.

Q. Okay. Are you aware of any advantages of using male, female members in a mold?

A. No. Excuse me, compression molding uses male, female as your description type.

Q. Let me see if I'm describing this right. Where one part of the mold has a cavity and the other part projects into the cavity.

* * *

[p. 98] A. He handled our patents during the time of Max Pro and Riddell.

Q. Why is he no longer representing OCP?

MR. KERGER: Objection, instruct the witness not to answer based upon attorney-client communication.

Q. Do you know Gary McNabb?

A. The name is familiar but I can't place it right at the moment.

Q. You don't recall any business dealings with him?

A. No.

Q. Jessie Boatman?

A. No.

Q. Michel, M-i-c-h-e-l, Marc, M-a-r-c?

A. No.

Q. Never heard of him?

A. Only that his name is on the patent.

Q. What patent?

A. The radio frequency patent.

Q. Which line? The one that you were provide – The ones you were provided a couple years ago that shows cutting the foam, placing it in a mold under pressure, and applying RF to it?

[p. 99] A. Correct.

Q. Do you know David Halstead?

A. Yes.

Q. Who is he?

A. He was formerly a research and development man and engineer for Bike Athletic, and when Bike Athletic sold their football helmet program to Athletic Helmets, he in turn then became the chief engineer for Athletic Helmets.

Q. A.H.I. is it?

A. That's A.H.I., yes.

Q. What was your relationship with him?

A. I was selling products to Bike Athletic. I had –

Q. Do you remember which products?

A. Body pads.

Q. Do you remember exploring with him any potential joint venture between Bike and FoamAid?

A. No.

Q. Do you recall some technology patented a few years ago dealing with helmet liners where the padding was provided by foam integrated with air bladders?

A. Yes.

Q. Okay. Do you recall exploring that with Mr. Halstead?

* * *

[p. 155] relating to the 702 patent; is that correct?

A. Yes.

Q. Why did he refuse to do that?

MR. KERGER: Are you asking him to read his mind or asking him what he was told?

Q. What's your understanding of why Mr. Lammy refused to sign that declaration?

A. He discussed in there the incidents have been the FoamAid RF sealing situation, that he received knowledge and so forth with reference to that.

Q. He was referring to the Marc 037 patent?

A. Correct.

Q. He was advised that he'd be committing perjury to sign that declaration?

A. Correct.

MR. WHEAT: This will be Defendant's Exhibit 4.

(Whereupon, Defendant's Exhibit 4 was marked.)

Q. Okay. Mr. Nelson, I'm handing you a document previously produced by your attorney in this case numbered by them as 000432 now labeled by the court reporter as defendant's Exhibit 4. Do you recognize that item?

[p. 156] A. Yes.

Q. What is that?

A. That's the letter from Mr. Lammy's lawyer with reference to the discussion of his not signing the second patent.

Q. And specifically in the second paragraph towards the end of the fifth line, he was advised as follows, "in view of what you have learned from a former salesman at FoamAid as well as from someone who represented a FoamAid customer. Specifically, more than one year before the '824 application was filed, FoamAid took orders and filled some of them for athletic pads which were produced by cutting preforms from partially cross-linked polyethylene foam, placing the preforms in a non-sticky state, i.e., at about room temperature, into molds and using RF heating to heat the preforms causing them to conform to the mold cavity." Is that correct?

A. No.

Q. What's not correct?

A. That was never done.

Q. Was he referring to the Marc process?

A. Yes.

Q. Covered by the 037 patent? What did you do next?

[p. 157] MR. KERGER: Did you want an answer to your question? You asked him was it referring to the 037 and the witness was reviewing the document.

A. What's the 824 application?

Q. That's the application that matured into the 110 patent.

A. Okay.

MR. KERGER: Your question I think was did he know to what Mr. Lammy's lawyer was referring, which of the Marc patents?

Q. Mr. Nelson, they were referring to the Marc 037 patented process, weren't they?

A. That's what was included with there, yes, right.

(Whereupon, Defendant's Exhibit 5 was marked.)

A. They did not – when I was associated, involved with FoamAid, they did not – were not making any pads using the RF method.

Q. But you did recall FoamAid experimenting with that process.

A. Yes, I do.

[p. 158] Q. You knew what Mr. Lammy's attorney was referring to, didn't you?

A. Yes. Because we – Mr. Lammy and Mr. Riwelski, the attorney and I discussed what – the RF process prior

to our filing the 824 application. It isn't that Mr. Lammy learned about this right here. Mr. Lammy knew about it before, and we discussed that, did that infringe on what we were filing.

Q. Okay, so you knew about the Marc patent but made a determination that what you were doing was something different, is that what you're saying?

A. Yes. It is different.

Q. But there was no question in your mind what Mr. Lammy's attorney was referring to in this letter, was there?

A. I – no question other than I did not know about it, if that was the case, right.

Q. Now, you knew he was referring to the Marc process that FoamAid had experimented with.

A. Yes.

Q. This next item I'm handing you was previously produced by your Counsel numbered 000446 and the court reporter has marked that as Defendant's Exhibit 5. In response to the Lammy problem you petitioned the patent office to allow you to proceed with the 702 application [p. 159] without Lammy; is that correct?

A. Yes.

Q. You told the patent office you didn't know what Lammy was referring to, didn't you?

A. As far as? I did not say I didn't know what he was referring to because I knew what he was referring to.

Q. But the effect of the next declaration you filed was that you really didn't know what Lammy was talking about; isn't that correct?

A. No.

MR. KERGER: Objection. Go ahead.

MR. WHEAT: Let's mark this as Defendant's Exhibit 6.

(Whereupon, Defendant's Exhibit 6 was marked.)

Q. Mr. Nelson, this item I'm just handing you was previously produced by your Counsel labeled with number 000427 and has now been marked by the court reporter as defendant's Exhibit 6. Do you recognize that item?

A. Yes.

Q. That's a document you filed with the patent office to explain away Lammy's contentions?

A. Yes.

[p. 160] Q. You refer to it as the alleged FoamAid process?

A. Yes.

Q. Do you say in there you were familiar with the process?

A. I don't say I'm familiar with it but I say that -- I explain what it is, so there's some degree of familiarity there.

Q. Do you explain that you think it might be the Marc process?

A. No, I do not.

Q. You say in Paragraph 4 I believe that the FoamAid process might have been the subject of certain U.S. patents?

A. Yes.

Q. And upon further identification – excuse me, further investigation, you've identified three U.S. patents?

A. Yes.

Q. Which three patents did you refer them to? What are the numbers?

A. The 238.

Q. The Marc 238 patent?

A. Yes.

Q. What's the next –

A. The Marc 876.

[p. 161] Q. And what's the next one?

A. 167.

Q. What about the 037 patent?

A. I don't know. What about it?

Q. Did you identify it to the patent office?

A. No, I did not.

Q. That's the one you knew Lammy was talking about, isn't it?

A. I knew there was – I said there were more than two patents. That could have been one of them.

Q. The three you identified, none of those are the Marc process that FoamAid experimented with, are they?

A. They're all his patents.

Q. Are they the one FoamAid experimented with?

A. I don't know exactly which one they were experimenting with. They were experimenting with Marc.

Q. 037, that's the Marc one where you cut the preforms, stick them in a mold, compress them and apply RF heat.

A. Okay.

Q. You didn't identify that one to the patent office even though you knew about it; is that correct?

A. I didn't know that patent specifically, right. I knew of the Marc patents and the process.

[p. 162] Q. Which of those Marc patents deals with cutting preforms from partially cross-linked polyethylene foam?

A. I would have to read these to find out which of these –

Q. Please do, if you'd like. Two of those are flow molding. You can get rid of those quick, right?

A. Yeah. All three of these are flow molding.

Q. The three you disclosed to the patent office are flow molding.

A. Yes.

Q. The one you did not disclose is compression molding?

A. It's RF molding, yes.

Q. The process FoamAid experimented with –

A. It's RF molding, not compression molding, right.

Q. Last Page 3 of the declaration where you identified these items to the patent office, the last paragraph you said, "I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true."

A. Yes.

Q. In response to that declaration the patent [p. 163] office took your word for it and issued a patent, didn't they?

MR. KERGER: Objection to the form of the question, but you may answer.

A. I don't know how – what they – they accepted the patent. How they did it, if it was my word or not, that I do not know.

MR. WHEAT: Let's mark this as Defendant's Exhibit 7.

(Whereupon, Defendant's Exhibit 7 was marked.)

Q. Mr. Nelson, I'm handing you an item labeled – excuse me, entitled Attachment to the Notice of Allowability previously produced by your Counsel

marked as 000455 now marked by the court reporter as Defendant's Exhibit 7.

A. Correct.

Q. Do you recall ever seeing that item?

A. Yes.

Q. Let me refer you to the last sentence on the first page where the patent examiner said "Mr. Nelson in his declaration states that other than the three patents that he has submitted for the file, he has not been able to obtain any other information about the process." Excuse me, that's the next to the last sentence. Do you see that?

[p. 164] A. Yes.

Q. Do you recall seeing that before?

A. Yes.

Q. "The alleged process is stated to use RF heating"?

A. Yes.

Q. Over to Paragraph 5, do you recall seeing where the examiner said "Any comments considered necessary by applicant must be submitted"?

A. Yes.

Q. The next sentence, "Such submissions should be clearly labeled 'Comments on Statement of Reasons for Allowance' "?

A. Yes.

Q. Do you recall previously telling the patent office that you understood it was your obligation to disclose anything associated with your application?

A. Yes.

Q. Did you ever advise the patent office of your familiarity with the Marc process that FoamAid experimented with?

A. Did I –

Q. Did you ever say "Examiner, wait a minute, I forgot to tell you about another Marc patent you might want [p. 165] to look at"?

A. No.

Q. Did nothing to bring that to the patent office attention.

A. Nope. Not to my knowledge.

Q. Is OCP for sale?

MR. KERGER: What's that got to do with the lawsuit as it presently is divided, Counselor?

MR. WHEAT: Perhaps it may lead to some other –

MR. KERGER: No. If you can't come up better than that, there's no –

MR. WHEAT: Perhaps representation have been made in association with that sale that have bearing on this lawsuit.

MR. KERGER: On the issue of viability of the patent? You can answer.

Q. Is OCP for sale?

A. No.

Q. Has it been for sale recently?

A. It – like anything, just depends upon dollar amount. I'm saying it's – it is not for sale.

* * *

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF OHIO
WESTERN DIVISION

[Caption Omitted In Printing]

Deposition of Ramond Pleiness March 24, 1995

* * *

[p. 25] Q Are you familiar with a company known as Foamaid?

A Yes.

Q What was your dealing with them?

A It's very peripheral. They're one of our distributors, but I didn't call on them.

Q What's your understanding of the applications they performed?

A Well, they converted our foams, plus other products, into finished products for the automotive industry, for example, which is their primary – I believe it was their primary source of customers. They would die-cut. They were doing some molding operations.

Q Which process were they utilizing, as you recall?

A The only one that I am really familiar with is the – what we have referred to in our bulletin as RF molding, high-frequency molding.

Q And what's that process?

A It's a compression molding process where cold foam is put in the cavity of a mold, [p. 26] the mold is

closed, and then the mold is heated via radio frequency waves. The foam is heated also. And then it's cooled.

Q Is the foam die-cut before it's placed in the mold?

A It could be, yes.

Q Do you know whose process that is?

A Michel Marc.

Q Do you know when Foamaid utilized that process?

A Sometime around 1984, give or take a little bit. I'm not exactly sure because, again, I was not involved directly with Foamaid.

Q You mentioned Michel Marc. Who is he?

A He's President of the – I don't know the name of his company right offhand.

Q Clint, perhaps?

A Clint, yes.

Q C-l-i-n-t?

A Yes. And he was the inventor of the process, the RF process.

Q Are you aware of any patents issued to Mr. Marc?

A He has a patent, to the best of my [p. 27] knowledge.

Q I'm handing you a document which was previously labeled as Defendant's Exhibit 1 in this case. It's United States Patent No. 4,524,037 issued to Michel Marc on June 18, 1985.

I'm going to ask you to review that and see if that refers to the process you've been describing.

A The abstract, yes, is what I have just described.

Q And, again, if you could take it from start to finish, what's your understanding of the Marc process?

A The Marc process is a compression molding, what we refer to as a compression molding process where you've got a two-part mold, the foam is put in the mold, the mold is cold and it's closed. It's a special polymeric mold that will withstand the RF.

After a specific amount of time, the unit is cooled to form the part. Then the mold is separated and the part removed.

[p. 28] Q Does the word "preform" mean anything to you?

A Yes.

Q What does that mean to you?

A Preform could be one of two things. It could be a simple die-cut piece or it could be something that's a three-dimensional form that's put into a mold prior to, in our instance or in this instance of Michel Marc, heating the material and cooling the mold and the product.

Q So you would perhaps cut a piece of foam, place it in the mold, close the mold, heat it by RF, cool the mold and then remove the finished product.

A Yes.

Q And, again, when was it you believe Foamaid was utilizing that process?

A Prior to – approximately 1984, give or take a little bit. I'm not exactly sure.

Q Do you have any understanding of how Foamaid obtained rights to utilize the process covered by the Marc patent?

A It had a license, a sublicense from Voltek.

[p. 29] Q When you say "license', what do you mean?

A "Sublicense" is what I should have said. It's an agreement in which they paid a fee to Voltek to – for Voltek to provide them with the technology.

Q Let's take it from the opposite direction.

Marc had a patent and he licensed –

A – Voltek.

Q – that process to Voltek?

A Yes.

Q What does the word "license" mean to you?

A We paid Marc, Michel Marc a fee for using his process and promoting it.

Q Rented the process from him? Paid him rent, obtained permission to use the process?

A Yes.

Q And then you gave permission to Foamaid to utilize that process?

A Yes.

Q And when would that have been?

A Again, it was approximately 1984, give or take a little bit.

* * *

IN UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF OHIO
WESTERN DIVISION

[Caption Omitted In Printing]

Deposition of Ohio Cellular Products Corporation
April 28, 1995

• • •

[p. 8] same apple, so to speak, which would be abuse of the discovery process.

MR. BERES: Well, Mr. Melhorn, as you know, we're here to take the deposition as noticed. Ohio Cellular Products designates whomever they choose.

Q. Mr. Nelson, are you the sole designee of Ohio Cellular Products at this deposition today?

A. Yes.

Q. Is there anyone else at the company who would have been capable of being designated on any of the areas contained in Deposition Exhibit 3?

A. No.

Q. Is it your position, sir, that you've produced all the documents that are responsive to the request for production of documents contained in Deposition Exhibit Number 3?

A. Yes.

Q. On Tuesday your counsel provided to us some additional documents. I'd like for the record for you to identify these for us.

MR. MELHORN: Do you want the record to show what you've handed the witness?

MR. BERES: Yes.

• • •

[p. 12] Q. Mr. Nelson, could you please tell us what this binder is?

A. It's a two-day seminar in Baltimore, Maryland regarding technology and application of closed-cell foam.

Q. And did you attend this seminar?

A. Yes, I did.

Q. Thank you. Mr. Nelson, who are the current corporate officers of Ohio Cellular Products?

A. Just myself.

Q. And your position?

A. President. President.

Q. Any other officer positions that you hold –

A. No.

Q. – aside from president?

A. No.

Q. Who are the directors of Ohio Cellular Products?

A. Myself, my wife, and my attorney.

Q. And who is that?

A. Duard Ballard.

Q. How do you spell his first name?

A. D-u-a-r-d.

Q. And last name?

A. B-a-l-l-a-r-d.

[p. 13] Q. And who are the shareholders of OCP?

A. I'm exclusive shareholder.

Q. You were present during Mr. Lammy's deposition yesterday, were you not?

A. Yes.

Q. Do you recall his testimony regarding the start-up phase of Ohio Cellular Products?

A. Yes.

Q. When did you first meet Mr. Lammy?

A. In October of '87.

Q. And when did you start experimenting with cross-linked foam in connection with OCP?

A. January – January of '88.

Q. And at that time what cross-linked foams were you experimenting with?

A. Polyethylene.

Q. What particular brands?

A. Manufacturers' brands or –

Q. Yes.

A. Sentinel, Monarch, Hules, and Voltek.

Q. With Voltek would that include the Volara and the Minicel?

A. Yes, it would.

Q. And with Hules would that include Trocellen?

* * *

[p. 76] A. No. No.

Q. Mr. Fieseler goes on to say that the three patents were identified in a search we performed using the information you provided to us regarding Michel Marc and Clint, Inc.

A. Yes.

Q. Do you recall providing information to Mr. Fieseler regarding Michel Marc?

A. Yes.

Q. Do you recall providing information regarding Clint, Inc.?

A. Yes.

Q. What information did you provide regarding Mr. Michel Marc?

A. I contacted one of the foam manufacturers to find out who, in fact, does that process to get his name so that he could pursue finding what patents had relationship to it.

Q. Who did you contact?

A. Contacted Ed Benjaminson who is the field sales manager for Sentinel Foam Products.

Q. When did you contact him?

A. When I was requested to prior to this because they must have asked where could they locate it and I [p. 77] checked with Mr. Benjaminson to get his name and more definite information so they could find it in the records.

Q. And you previously mentioned or referred to that process, what process were you referring to?

A. Radiofrequency molding.

Q. To the best of your understanding, as president of OCP, what was that process? Can you explain it to me so I understand it?

A. It's the process of molding foam through the utilization of radiofrequency waves.

Q. Did that process include cutting or die cutting the foam to an approximate size of the mold?

A. Yes.

Q. Did it place it in the mold cold or heated?

A. Cold.

Q. At room temperature?

A. Yes.

Q. And then it was heated in the molds?

A. No. It was compressed.

Q. It was compressed first?

A. Yes.

Q. And then was it heated?

A. It was – it was given radiofrequency waves.

Q. And that caused the foam to heat up?

[p. 78] A. That does not heat the foam. It changes the molecular structure of the foam.

Q. The temperature of the foam does not increase –

A. No.

Q. – during that time period? And then following the stopping, I guess, of the radiofrequency waves, is the product removed?

A. Yes.

Q. And is it in its thermoform shape at that point?

A. Yes.

Q. And who is Clint, Inc.?

A. It's a company out east is all I know.

Q. Okay. Did you have any previous involvement with Clint, Inc. prior to your investigation of the Marc process?

A. No.

Q. Did you fully describe to Mr. Fieseler the Marc process as you understood it?

A. Yes.

Q. And did you know that he had a patent on the process at this time?

A. At this time, yes.

[p. 79] Q. When did you first learn that Mr. Marc held the patent on this process?

A. When I first learned of the process.

Q. And that was well before the November, '92 letter?

A. Oh, yes.

Q. When was that?

A. That was well before I started – it was before we started Ohio Cellular.

Q. Okay. I don't want to go back over prior testimony –

A. Right.

Q. – but to the best of my recollection that was in about 1984, correct?

A. Yes, right.

Q. To the best of your recollection, were any of the three patents which were discussed in the November 12th, 1992 letter that we've identified as Defendant's Exhibit 28 refer to the radiofrequency process that you were aware of as early as 1984?

MR. BERES: Could we have that reread?

A. Yeah, have that reread.

(Whereupon, the reporter read back the

* * *

[p. 116] A. Scott Port-a-fold was one of the companies and Glass Plastics out of Chicago, and there were a few other ones, smaller type of companies all involved in plastic molding of some sort.

Q. But FoamAid was the only one who was doing cross-linked polyolefin, correct?

A. Yes.

Q. And Voltek, I guess, too?

A. And Voltek? No, no. FoamAid bought the foam from Voltek.

Q. So you were not a distributor of Voltek?

A. No.

Q. But you distributed Voltek's foam through your manufacturers rep agreement with FoamAid?

A. Some of the products were molded in Voltek and some of the foam that I sold was Voltek, just rough form.

Q. Okay. It's my understanding that you first became aware of the Marc patented process while you were at FoamAid; is that correct?

A. Yes.

Q. And how did you learn of that process? Was that part of something that they taught you as a manufacturers rep?

A. No, no. At that time Voltek had just licensed [p. 117] the process from – from Clint. Clint Company, is it?

Voltek had licensed the process and Voltek was trying to get its eight or ten distributors throughout the country to utilize this process in their plants.

Q. And FoamAid was one of those distributors?

A. And FoamAid was one of those distributors. They had one machine and one setup and they were experimenting with it, but they were doing everything under wraps and nobody knew about it. It was all secretive. And I did see it at one time molding and that was my only viewing of that particular molding. I did not want to get too close to it because of the high radiofrequency waves on that.

Q. Oh, really? They told you that was dangerous?

A. It's very dangerous, yes.

Q. Do they have the shielding around it?

A. Oh, yes, big metal shielding. They have to watch out for the airplanes coming in because the radiofrequency waves disrupt the airplane radio traffic also.

Q. Did they have to get FAA approval before they could use it?

A. Yes.

Q. Really? So you were told at that time that [p. 118] that process was under license from somebody else?

A. From Voltek.

Q. From Voltek?

A. Yes.

Q. Okay. I'd like to show you a document that's been previously marked as Defendant's Exhibit 7, it's called Attachment to the Notice of Allowability. Is this the document that was referenced in Defendant's Exhibit 32, the letter from your counsel?

A. Does this have to do with the second patent –

Q. Yes, sir.

A. – expiring at the same time as the first?

Q. No, sir. This is the document which was filed by the patent examiner giving his reasons of the notice of allowability.

A. Oh, yes.

Q. Why don't we direct your attention back to Exhibit 32 for a minute and go to page two of Exhibit 32. Mr. Fieseler points out that in paragraph four the examiner set forth the following statement of reasons for allowance. He goes on to quote, a principal reason for the allowance of these claims is the lack of any teaching or suggestion to mold foamed, cross-linked polyolefin articles that are free of flash at the mold parting line, by positioning a foamed

* * *

ROACH AND WHEAT

SUITE 800, THE REPUBLIC BUILDING

429 W. MUHAMMAD ALI BOULEVARD

LOUISVILLE, KENTUCKY 40202-2346

(502) 585-2040

MARTIN ROACH (1938-1988)
JACK A. WHEAT
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April 21, 1995

Donald F. Melhorn, Jr., Esq.
Steven Funk, Esq.
MARSHALL & MELHORN
Four SeaGate, Eighth Floor
Toledo, Ohio 43604

VIA FACSIMILE: (419) 249-7151
AND FIRST CLASS MAIL

Re: Ohio Cellular Products v. Adams USA

Dear Frank and Steve:

Reassured by recent developments in this case, the principals of our clients have unanimously reaffirmed their decision that there will be no nuisance settlement in this case. We fully concur with our client's decision. Our client understands the extensive expenses which will be incurred to litigate this matter to conclusion and are willing to incur those expenses rather than pay any ransom to make this case go away.

Our clients' decision is reinforced by their understanding that patentees are often required to pay the alleged infringer's legal fees. Especially considering the noninfringement in this situation coupled with Mr.

Nelson's inequitable conduct associated with procuring the patent registrations, this is a good case for a fee award. As noted by the Court of Appeals for the Federal Circuit, Section 285 of the Patent Act provides for attorneys' fees recoveries to alleged infringers to prevent "a gross injustice" such as we have in this case. More specifically, the Court has noted as follows:

> Such injustice certainly includes situations where a patentee has litigated in bad faith, or committed fraud or other inequitable conduct during prosecution before the Patent and Trademark Office.

Machinery Corporation of America v. Gullfiber AB, 774 F.2d 467, 227 USPQ 368,372 (Fed. Cir. 1985).

Notwithstanding, and without any admission of liability and solely for the purpose of avoiding additional litigation expenses, our clients have directed us to provide OCP with one *final* opportunity to settle this matter along the lines specified in our letter of January 24. That is to say, our clients will dismiss their invalidity/inequitable conduct claims, without prejudice, in exchange for your client's dismissal of this action with prejudice, along with an acknowledgement that Adams and Apehead are not infringing either of the patents in issue joined with a covenant not to sue in relation to the process now utilized by Adams and Apehead.

A primary rationale supporting this settlement is the clear admissions of your client at his deposition. For instance, he acknowledged being familiar for "many, many years" with the Voltek document which Mr. Nelson agrees dates back "earler than" the mid 1980's. (Nelson

depo. at p. 118). The Voltek publication clearly anticipates both of your clients' patents, yet Mr. Nelson did not disclose that publication to the Patent and Trademark Office.

Similarly, we note your client's acknowledged familiarity with the Marc process reflected in the '037 patent, Defendant's Exhibit 1, prior to your client's initial application for the patent in issue. (See Nelson, depo. at p. 158). Furthermore, in addition to your client's acknowledged familiarity with the Marc '037 Patent, we note your client's admission that he was aware that the '037 Patent was the technology referred to in Mr. Lammy's refusal to execute the inventor's declaration. Notwithstanding, Nelson failed to identify that patent to the examiner, rather he specifically referred to examiner to other *less related* Marc patents. (See Nelson Depo. at pps. 153-165.)

We cannot imagine a clearer case of the type of inequitable conduct which renders patents unenforceable as a matter of law.

Furthermore, considering that the current process utilized by Adams is the identical process which your client previously determined was outside of the scope of the earlier of the two patents in issue, considering your client's admission that the more recent patent was prepared in an attempt to read on the process utilized by Adams and considering the clear inequitable conduct associated with the prosecution of same, this matter is a classic case for an award of attorneys' fees to the defendant.

We recognize Mr. Nelson's contention that "he does not believe" the Lindt report in which Professor Lindt

reported that Adams and Apehead do indeed preheat their foam before insertion of same into the molds. Notwithstanding, now that both of you, as well as your client's expert, Professor Frisch have witnessed the process and even touched the pre-heated preforms, we trust that you have advised Mr. Nelson that he is mistaken in his "belief" that Adams and Apehead do not pre-heat the preforms.

Along that line, we are satisfied that your client's expert, Professor Frisch, has concluded that the Adams/Apehead process is not within the scope of any proprietary rights of your client.

Our instructions are to pursue invalidation of both of the patents and recovery of attorneys' fees.

Nonetheless, as noted above, in a *final* effort to avoid the substantial expenses to be incurred in association with the extensive discovery which will be pursued to more clearly establish your client's inequitable conduct, the expense of summary judgment proceedings and trial expenses if this matter is passed to trial, we are authorized to provide your client one last opportunity to accept the settlement proposal outlined above.

This offer will remain in effect until the close of business on Monday, April 24, 1995.

Very truly yours,

/s/ Jack A. Wheat
Jack A. Wheat

JAW/kml
cc: Adams USA
Vance A. Smith, Esq.

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF OHIO
WESTERN DIVISION

[Caption Omitted In Printing]

Deposition of Peter Halstead July 22, 1997

• • •

[p. 6] A. That's a good question. I believe Colgate-Palmolive actually form Athletic Helmet, Incorporated.

Q. 15 Prior to your employment there where were you employed?

A. BIKE Athletic Company.

Q. 16 What period of time?

A. Late '84 or early '85 I came to BIKE.

Q. 17 What was your position there?

A. I had several. I was process engineer when I first came; then I became a senior research engineer.

Q. 18 Do you know Don Nelson?

A. I do.

Q. 19 How long have you known him?

A. Since late '84 or early '85.

Q. 20 Okay. How did you become acquainted with him?

A. He was a salesman for Foam Aid Industry or Foam Aid, Incorporated.

Q. 21 What was the nature of its business?

A. They were custom fabricators of molded products predominantly foam.

(Off the record remarks).

Q. 22 So again, how did you first become [p. 165] acquainted with Mr. Nelson?

A. He was making a presentation at BIKE Athletic.

Q. 23 Relating to what?

A. I believe there was a couple of items. One was a helmet liner that was molded and dialectrically sealed together, and the other was the athletic padding that Foam Aid was seriously considering producing.

Q. 24 And what was BIKE's response to that – That was an approach from Mr. Nelson?

A. I believe so. I was a new employee at BIKE, but my first job at BIKE was as process engineer to work on our current inhouse foam molding process which we felt could be improved, and as such I was brought into the meeting, and the results were we went to visit Foam Aid.

Q. 25 Who is "we"?

A. Myself and Sloan Becker who was an industrial engineer.

Q. 26 Employed by BIKE?

A. Correct.

Q. 27 I believe you said you and Mr. Becker went to Foam Aid?

A. That's correct.

[p. 166] Q. 28 Why don't you summarize for us what you recall of that trip.

A. We flew in the night before. We had dinner with Mr. Nelson. The next morning we went to Foam Aid, and we met with two of their engineering staff; I don't recall their names, but I can picture the one young man's face; he was a very nice young man, and there was considerable conversation about the parts we were interested in and whether Foam Aid would be willing to manufacture those and what not, and then we had a tour of the facility.

Q. 29 What did you get to view during that tour?

A. They were making a variety of products out there. The one product very impressive to me from an engineering standpoint was I believe a deodorizer, like a Renuz-It where they were vacuforming and sealing the chemical into this thing in a very automated completely scrapless environment, that the engineer was very proud of how this machine worked, and we spent some time looking at that which I think was supposed to communicate to us the efficiency capabilities that they had. And then we reviewed another operation where – my recollection is it was some sort of a shoe insert that was being [p. 167] made in a prototype mold.

Q. 30 To your recollection it was a shoe insert made out of what type of substance?

A. I believe it was a polyethylene. It was a – I'm pretty sure it was a shoe insert. The molds were a silicone material, very much the color of east Tennessee clay.

Q. 31 Okay. And you got to view that process?

A. Yes.

Q. 32 Describe for us what you were able to view?

A. Parts were laid out predie cut I guess is the word, they were, you know, approximately the size of the mold; they were placed in the mold, a rotary environment, if you will; operator stood in one place, placed them in the mold, and they rotated around, and another mold was there for the operator to fill, and the mold that rotated around went under a radio frequency discharge unit which emitted a radio frequency which is along the orders of a microwave in the way it heats things, certain heating cycle or cycling, which this thing is in this radio frequency which is a press I guess which squeezes the mold and emits this frequency and then it opens up [p. 168] and then rotates to the next station and then eventually comes back around, and there's a cooling cycle there, and then it comes back around to the operator who opens the mold, takes out the part, puts in the next blank, and it repeats itself.

Q. 33 Okay. Now, the blanks, the material blanks were precut I believe you said?

A. Yes, uh-huh.

Q. 34 To approximately the size and shape of the mold?

A. Right. The whole point was that you had a very nice finish on the part. You didn't have the typical finish of a part that's been formed and later cut out where you just can't cut it as nice and neat as if it was formed that way.

Q. 35 And then the mold would be closed after it was after the –

A. That's right. This blank, if you will, was put in the mold; the mold was closed, and it rotated to the RF station.

Q. 36 Where it was heated through radio frequency?

MR. KERGER: Object to the form of the question. You're leading, counsel.

Q. 37 What happened at the RF station?

[p. 169] A. It was subjected to the radio frequency waves which caused the foam to become soft enough,, if you will, to flow in the mold and take on the shape of the mold.

Q. 38 Okay. In your testimony earlier you likened that to some other type of heating?

A. Oh, yeah. It's similar to a microwave. It's an electrical field that excites the molecules as I understand it in the material, and as the molecules excite the material becomes hot.

Q. 39 And then what was the next step you viewed in this process?

A. Well, it was really just one big machine, but the operator would load the blank; it would go to the RF head; then it would go to a station where it d[illegible] nothing except cool off. Apparently if you demolded it too soon it would not necessarily hold its shape. And then it came back to the operator who would take out the finished part and set it in one spot and take a new blank, put it back in the mold, close it up, and it was just kind of a merry-go-round affair.

Q. 40 When was this process demonstrated to you?

A. It would have been early '85. It was [p. 170] my very first project at BIKE.

Q. 41 And when did you become employed at BIKE?

A. Late '84 – early '85. I interviewed in late '84; I believe I went to work in early '85.

Q. 42 And while this process was demonstrated to you who was present?

A. Mr. Becker, Mr. Nelson, and the young engineer whose name escapes me and another gentleman from Foam Aid who met us out on the floor, and I'm not sure if he was the production manager or somehow related to – somehow he was related in the way that he was the one responsible for quoting projects, what it would cost for us to have a job done there.

Q. 43 Was there any discussion of any proprietary rights in that process?

A. Yes. The temperature settings and dwell times and specific composition of the foam product being used was proprietary.

Q. 44 Okay. Let's back up. By "proprietary" I meant ownership, like the ownership of a patent or something like that?

A. No, nothing like that was discussed. Merely we started asking questions about exactly how this worked, and we were told that you needed a [p. 171] special foam which was available only from Foam Aid, they wouldn't

want to tell anybody how it was made and that the process itself was covered under a patent and that they had the official license to do that kind of work.

Q. 45 They had the license?

A. They, Foam Aid, as I understand it had the license to use that technology.

Q. 46 Was there anything explained to you as being confidential about that process?

A. Well, the confidential nature was exactly how they had set the heating cycle and the dwell time and that there was some additive, if you will, to the foam that made it susceptible to radio frequency waves.

Q. 47 What do you mean by the phrase "dwell time"?

A. How long it stayed at different work stations.

Q. 48 But as far as the steps and the stations, the stations and the steps of the process, that was demonstrated to you?

A. Oh, yeah, uh-huh. Stand right there and watched the machine go around several times, and then questions, were, you know, "Gosh! How much [p. 172] pressure's on it? How much radio frequency is there? How long is the radio frequency on for?". And those were not available to us, those specifics.

Q. 49 Did BIKE have any later involvement in the process or project?

A. Yes. Yes, we did. We had been trying to solve our own inhouse problems; we were doing it kind of a different process, more traditional compression molding process, and we were unhappy with our scrap and our through-put time, and we were pretty much convinced the machinery we were using was really designed for some other purpose and that we either needed to replace the machinery or we needed to purchase the parts from outside to become more efficient and have a better part from the standpoint of appearance and quality in general. So we investigated several opportunities, and we eventually discussed with Foam Aid I believe and then got involved with Voltek, V-O-L-T-E-K, I believe it is, and spoke with a gentleman at Voltek, Ray Pleiness and was invited to –

MR. WHEAT: P-L-E-I-N-E-S-S I believe.

THE WITNESS: That sounds right. And we were invited to a seminar in the New Hampshire area and went to it; the seminar was on radio frequency

* * *

[p. 173] A. Yes, it is.

Q. 76 Do you agree with everything in there or is there something you would like to explain or –

A. No. Essentially this is it. I mean if you all have any questions I'd be glad to try to explain them.

MR. WHEAT: I think I'm about finished. I just want to summarize and make sure I understand your testimony.

Q. 77 When did you first meet with Mr. Nelson?

A. Late '84 or early '85. Most likely early '85.

Q. 78 And how is it you recall that date?

A. It was my first project with BIKE.

Q. 79 And when did you become employed at BIKE?

A. Well, I think I actually went to work in very early '85.

Q. 80 And when you first met with Mr. Nelson the process was demonstrated to you?

A. Not when I first met with him. He first met with us at BIKE.

Q. 81 Excuse me. Okay. And then after he [p. 174] met with you at BIKE you went to Foam Aid?

A. Correct.

Q. 82 And the process was demonstrated to you at Foam Aid?

A. A couple of different processes, but this one in specific, yes.

Q. 83 And is the steps of the process again were?

A. Die cut a part, put it in a silicone mold; that mold then went under a pressure and RF head, if you will, that applied pressure to the mold and emitted this radio frequency; then it went to a cooling station; I believe it was passive; there might have been a fan under it or something that cooled it; then it went back to a loading station which was then an unloading station; you took the part out, you put the blank in, and it started over.

Q. 84 And Mr. Nelson was present when that process was demonstrated?

A. Yes, he was.

Q. 85 What was secret if anything about the process?

A. The specific settings of the machine and the exact additive to the foam that allowed it to be reactive to this.

* * *

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RICHARD M. KERGER
WRITER'S DIRECT DIAL NO.: 255-5971

October 13, 1997

Jack A. Wheat, Esq.
Wheat, Camoriano, Smith & Beres
Suite 800, The Republic Building
429 W. Muhammad Ali Blvd.
Louisville, Kentucky 40202

Re: *Ohio Cellular Products v. Adams*

Dear Jack:

I am writing to potentially save you some time. The fact is that if the attorney fee award exceeds a very limited amount, you will not collect it because the company will be liquidated. If you wish to discuss a resolution on a nominal basis, please let me know.

Sincerely,

/s/ Richard M. Kerger
Richard M. Kerger

RMK: bam

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF OHIO
WESTERN DIVISION

[Caption Omitted In Printing]

Transcript of the Proceedings May 6, 1997

* * *

[p. 27] totally irrelevant.

MR. BENNETT: Your Honor, what we are doing here is simply trying to demonstrate to the Court the ebb and flow of the prior art discussions that were going on both before and after.

The testimony of this witness will show that one, two, three – at least three searches for prior art were performed by counsel for Ohio Cellular; that two searches, at least two searches that we know of, of the prior art were performed by the patent examiners. The bottom three were as a result of Mr. Fieseler's firm and the Purdue letter.

The prior art references here also include indications that various classifications were searched that included the Marc patent, and we're going to be moving through this paragraph quickly just to highlight that for the Court so the Court has a sense of the ebb and flow of the prior art, the research that was done.

MR. WHEAT: Let me offer them a stipulation.I don't know if it's true or not. Counsel probably conducted some searches. We'll stipulate that they did. We'll stipulate that the examiners conducted searches. If that's what we're getting at, we'll stipulate to that, and that

that's what – well, I don't know where those came from. Was that listed in the [p. 28] patents, or was that disclosed to –

MR. BENNETT: These are all listed in the '110 –

THE COURT: Yes.

MR. BENNETT: – in the '110 patent in the references, U.S. references. These are disclosed in the reference sections. These were provided by Mr. Fieseler's firm as part of a response to an initial rejection following the production of the Purdue letter.

These are the only references to RF anywhere in the prior art and the ebb and flow, Your Honor, and here's the reason why: The different firm, William Brinks, conducted a search and did not disclose anything RF.

Patent Examiner Lowe, who examined both of these patents, did a search here, found nothing in relation to RF that he included in his reference citations. He did a second search in relation to the '222 application, including the very same subclassifications that included the Marc patent, the '037 patent. It's not here.

When he was presented with the material relating to Marc – Clint, and then this Marc, separate Marc patent, which is identified, I believe, in this one, he took a look at it, and his comments – following [p. 29] his final approval, he made a comment that we believe is dismissive of RF as irrelevant to what's happening here, and thus the only material here was provided by us, going beyond the obligation that we had, a good faith obligation to provide information to the examiner and everything else, one, two, three, here.

There was another search that this gentleman will be testifying to that was done before the '222 application was filed. None of it produced RF, so that's where we're coming from in terms of running through this testimony.

MR. WHEAT: Okay. Just on the speculating that the examiner dismissed RF as irrelevant, we're willing to assume all of that's true and forego the need to put on any further proof about that.

MR. KERGER: May I have a moment, Your Honor?

THE COURT: Sure.

(A discussion was had off the record.)

MR. BENNETT: We'll see if we can move it along here. We'll accept the stipulation.

So the Court will have this in front of him, and he can have an opportunity to take a look at it for himself, would you please pull Exhibit 1 again.

[p. 30] BY MR. BENNETT:

Q. Would you please indicate to the Court, where are the U.S. classifications that are implicated by this particular patent shown?

A. In the left-hand column.

Q. First page?

A. First cover page of the patent, left-hand column. There's a bracket 52, which the U.S. classification into which this patent was placed. Classes, and subclasses are listed starting with 264/152.

The line below that with the 58 in brackets indicates the field of the examiner's search, and the classifications with the search include or start with 264/321.

Q. Are you aware of – well, before I move on, the U.S. classification line, line 52, there are a whole bunch of classifications there, and the first one is in a boldface. What's the significance of the boldface?

A. That's the principal classification into which the patent was placed.

Q. What about the other unbold classifications we see?

A. Those are subsidiary classifications. The reason that the patent is placed there in this instance [p. 31] is because when future patent applications are filed, the examiner needs to identify relevant technology, and there may be some relevance of the subject matter in a few of those other classifications.

Q. Are you aware of whether the U.S. Patent Office has these classifications computerized?

A. Yes, they do.

Q. There's also something called a shoe, as I understand it. What is a shoe?

A. A shoe is actually equivalent to a file drawer that has all of the patents in a particular class and subclass.

Q. So using the '110 patent here as an example, would a copy of the '110 patent be contained in classification 264/321? It's the last –

A. That's the intention, yes, that this patent be placed in all six of those classes and subclasses.

Q. Let me direct your attention, if I can, to Exhibit 18. Can you identify that exhibit for the Court, please?

A. That is United States patent number 4,524,037 issued June 18th, 1985 in the name of Michel Marc, M-A-R-C.

Q. Now, in this particular patent, line 52, U.S. claims, again, has the listing of various [p. 32] classifications. What is the second classification listed for the Marc patent?

A. The second classification on line 52 is 264/321, and by the way, "U.S. Cl." is U.S. classification.

MR. WHEAT: I think we can offer a another stipulation, that the Marc classification was in the field that they searched.

THE COURT: Yeah. They appear to be in the same field.

Q. And finally, let me ask – let me ask you to identify Exhibit 6.

A. Exhibit 6 is a copy of United States patent number 5,273, '702 issued December 28th, 1993, signed to Ohio Cellular Products, named inventors, Donald Nelson and James Lammy.

MR. WHEAT: We offer the same stipulation, if that's where you're going.

MR. BENNETT: Thank you. We accept it, Your Honor.

Q. Did Bob – did you or your firm conduct any additional prior art searches in relation to the '824 application?

A. No.

Q. Did you or your firm conduct any prior art [p. 33] searches in relation to the applications that followed the '824 application, the 588 or the '222?

A. We conducted an additional search prior to filing the '222 application, but it was at a time that we had not yet decided to file the '222 application.

Q. Let me direct your attention to Exhibit 22 and ask if you can identify that for the Court.

A. Exhibit 22 is a copy of a search report prepared for me by Alora Cope, who is the firm's librarian at the Neuman firm.

Q. And tell me about your librarian's patent researching skills. What kind of training had you provided to her in that regard, or him?

A. Alora was a professional librarian, had worked at other law firms, and was adept at technical subject matter, and was very competent in carrying out searching, and after the Neuman Williams firm dissolved, she had her own business at doing this until she retired.

Q. Had you had an opportunity to observe her performance over time?

A. Yes, I did.

Q. And in the course of that direct observation, did you form any opinions to her competence as a patent researcher?

* * *

[p. 36] Q.And was the elimination of that room temperature terminology the purpose of the prosecution of the '222 application?

A. Yes.

Q. How did Ohio Cellular respond to this examiner action?

A. Well, we went through each of the points set out by the examiner and attempted to address them point by point.

Q. And we will be getting into the filing and declaration submitted by Don and James to that in a few moments, but before we get there, before there was actually a filing, this is the relevant time period.

This is the time when everything occurred, in relation to the Purdue letter. I would like to have you give the Court, from your lawyer's perspective, your patent lawyer's perspective, what occurred with respect to the preparation to submit the response to the examiner's action.

A. The first thing we did, of course, was to write the clients a letter, enclosing a copy of the office action, and to explain the significance of the examiner's findings and our proposals as to how to respond.

Q. Did that correspondence indicate an obligation [p. 37] with respect to disclosure information to the patent office?

A. Yes.

Q. And what was that indication that was given?

A. I don't remember without – from my own memory. It seemed to me that the examiner was looking for further information about the inventor's knowledge and belief that they were first inventors of the subject matter now being claimed, and the examiner specifically asked for a new oath or declaration, and in that declaration they needed to reaffirm their duty to disclose relevant information, and it would have been my practice to remind the client at that point.

Q. That's, in fact, the point I'm wondering about. What was the point that you reminded the client about in relation to the duty to disclose?

A. That we had a renewed duty to call to the examiner's attention any relevant prior art patents and printed publications, even if they went beyond those that we had already cited.

Q. Now, you indicated that that's something that was required of both inventors.

A. Yes.

Q. Who were the individuals listed as being inventors in relation to the '222 application?

[p. 38] A. Donald Nelson and James Lammy.

Q. Who is Mr. Lammy?

A. Lammy, in addition to being named as a co-inventor, was a business partner of Don Nelson's.

Q. And was that also true at the time the '222 application was being prosecuted?

A. No, it was not.

Q. And was that true at the time that you were preparing the response to the examiner's action objecting to the '222 application?

A. That was also true, Lammy was not Nelson's business partner at that time any longer.

Q. Was an attempt made to obtain an affidavit from Mr. Lammy that reaffirmed the issue that the examiner wanted the inventors to reaffirm for him?

A. Yes.

Q. Was that attempt successful?

A. No, it was not.

Q. Could you please tell the Court about what was done in terms of that attempt and what occurred?

A. We prepared a declaration for both Nelson and Lammy to sign indicating that they believed themselves to be the first, original, and joint inventor to the subject matter, which was the process minus the room temperature, that the preforms not be tacky or sticky.

[p. 39] I sent that to Mr. Nelson, who then indicated to me that he had attempted – or he did meet with Mr. Lammy. Mr. Lammy took the papers and was going to consider whether he would sign it or not.

Q. Did you subsequently learn whether Mr. Lammy was willing or was going to sign those papers?

A. Yes, I did.

Q. How is it that you learned that?

A. Mr. Nelson telephoned me and told me that, after meeting with Lammy, he believed that Lammy was uncomfortable about this, and then I also received a letter from Lammy's attorney.

Q. Let me direct your attention to Exhibit 9 and ask you to briefly identify that to the Court.

A. That is the letter I received from Lammy's attorney, which is directed principally to Mr. Lammy, but includes my name as a carbon-copied recipient by certified mail.

Q. The Court, of course, can read the letter. We won't burden the record with recitation of that. Let me merely ask –

MR. WHEAT: May I at least note on the record that that's previously identified as Defendant's Exhibit 4, so there's no confusion.

THE COURT: Same exhibit?

[p. 40] MR. WHEAT: Yes.

THE COURT: Different designations by the parties?

MR. WHEAT: (Attorney nods head.)

THE COURT: Thank you.

BY MR. BENNETT:

Q. Mr. Fieseler, did this particular letter make reference to the Marc '037 patent?

A. No, it did not.

Q. Did this letter describe the methodology described in the Marc '037 patent?

A. At the time I got this letter, we had no awareness of the '037 patent. From what I now know about the '037 patent, this does not include a description of what is in the '037 patent.

Q. Let's go to the point you just raised. This is really the ultimate point. When did you first learn of the Marc '037 patent?

A. I first learned of the '037 patent after the lawsuit had been filed against Ohio Cellular by the Marshall & Melhorn firm, which was after the issuance of the '702 patent.

Q. And a related question, but we need to ask it, when did you first learn of the methodology described in the '037 patent and that is the subject of the '037 [p. 41] patent?

A. Well, at the same time I learned about the '037 patent.

Q. When you received a copy of the Purdue letter, Exhibit 9, what did you do with it?

A. I immediately sent it to Mr. Nelson.

Q. Let me direct your attention to Exhibit 10 and ask if you can identify that for the record.

A. That is the copy of my transmittal letter to Mr. Nelson.

Q. In this letter, do you 'address this issue of the disclosure obligation an inventor owes to the patent office?

A. Yes.

Q. And could you please direct the attention of the Court to the portion of that paragraph where that's indicated?

A. Page 2, the last full paragraph, I discuss the obligation we all then had to disclose whatever we know about the FoamAid process to the Patent and Trademark office.

Q. I note about halfway down the letter the statement reads, "By providing me a certified copy of this letter, I, and you are now under an obligation, as Lammy's attorney must have obviously intended, to [p. 42] disclose whatever we know about the FoamAid process to the U.S. Patent and Trademark Office in connection with pending application."

Is that an accurate statement of what you understood your obligation to be?

A. Yes.

Q. Is that an accurate statement of what you understood Don Nelson's obligation to be?

A. Yes.

Q. What did you then do to fulfill that obligation?

A. Well, I discussed this with my associate, Patrick Arnold, who's indicated as a copied recipient, and we

decided we needed to contact Don to get any and all information he had about the FoamAid process.

Q. And did you and Mr. Arnold, in fact, undertake those communications with Mr. Nelson?

A. Yes.

Q. What did Mr. Nelson advise you regarding the FoamAid process and his knowledge of it?

A. Well, initially he couldn't tell us – he wasn't able to tell us much more than FoamAid itself, and the type of products that they were, you know, pads made out of foam material. And we prepared the response to the office action and supporting papers intending to [p. 43] include the Purdue letter without any further information from Mr. Nelson besides that.

Later, my associate, I notice in Exhibit 11, sent him the papers. No, this is not the letter.

Q. Let's take a look at Exhibit 11, because strangely enough, that's the one I have in my hand right now. Tell the Court what Exhibit 11 is.

A. I have to find it first. There was a series of correspondence that –

MR. WHEAT: Excuse me. Was I given a copy of Exhibit 11?

MR. BENNETT: Yes. Here's another one.

A. The purpose of this letter –

MR. BENNETT: Maybe I didn't, counsel. I apologize.

A. The purpose of this letter was to advise Mr. Nelson that we were still waiting for information from him about FoamAid, and the reason we sent the letter when we did is, we were within two weeks of the absolute deadline of filing a response and wanted to go on record as having made the request and prompt Mr. Nelson to disclose to us whatever he knew.

Q. Now, in this particular aspect, letter – excuse me, the exhibit, there is a reference to a [p. 44] patent; is that correct?

A. Yes.

Q. How is it that the information concerning this patent issue arose in relation to FoamAid?

A. My recollection is that, based on oral discussions by telephone with Don, he associated the FoamAid process with a patent.

Q. So that information came from Don?

A. Yes, it did.

Q. Now, did your firm at the time attempt or undertake any type of patent search in order to identify possible patents related to what Don could remember about the FoamAid process?

A. Yes, we did.

Q. How is it that that search came to be undertaken?

A. We had initially prepared a response to the office action, 1992 office action, attaching the Purdue letter and a declaration for Don to sign, which he indicated that,

beyond the Purdue letter, he only knew a limited amount about the FoamAid process.

He called us after receiving that initial declaration for him to sign and said, "Well, I actually know a little more than what your – what's set out in this draft declaration," and that little more was that [p. 45] there was a company named Clint.

Q. Did he indicated how he came to know the name Clint?

A. He may have, but I just don't remember.

Q. When you came into possession of the name Clint, what did you do?

A. We knew we then had to include that in the submission to the Patent and Trademark office, and that would naturally prompt the examiner to inquire what information is there about Clint that would have a bearing on this, particularly where we were planning on proceeding with Mr. Lammy. We wanted to clear up whatever concerns the examiner might have.

Q. Why would you have to give the name Clint to the patent examiner?

A. Well, because not to give it would be to withhold information. That would only be partially complete, since we were going to disclose the Purdue letter, and Clint was not included in the Purdue letter. Clint was something that Don had in his knowledge, communicated to us, and had the relevancy that made us obligated, in my view, to submit it.

Q. So the obligation is to include not just the stuff that an attorney or the client may deem – may themselves deem relevant, but all that may have a [p. 46] bearing on the application itself; is that correct?

A. Yes, there's an objective standard.

Q. Now, is there an obligation on the part of the parties, the inventor submitting the application, to go beyond disclosing what they already know?

A. No.

Q. Did, in fact, Ohio Cellular go beyond what it already knew and what Mr. Nelson had provided to you?

A. Yes, it went beyond at my behest.

Q. And what was done at your behest?

A. I asked a paralegal at my firm, McAndrews firm, to conduct a search for Clint patents that had to do with the molding of foam particles.

Q. Let me direct your attention to Exhibit 12 and ask if you can identify that for the Court.

A. Exhibit 12 is the search report on Clint patents.

Q. Could you please tell the Court, describe for the Court, the flow of this document?

MR. BENNETT: Your Honor, have you ever seen a dialogue report before?

THE COURT: Yes.

A. Starting with page 1, it's sign-on information, billing information, appears to have no substance until

you get to the bottom, where our paralegal, Walter [p. 47] Bronshawog (phonetic), entered certain terms for the search.

Q. If you move over to the top of the second page, and you have continued variations on Clint continuing. What is this, when you move down into this particular part of the document, beneath that, immediately above the line and below the line? Second page, I'm looking at.

A. On the second page above the line?

Q. Just to give the Court the ability to quickly read it.

A. Identify information. Any time you see a question mark, that's a prompt for the operator, the paralegal at our firm, to take some action. What does your – what do you want your search? PA, patent assignee, equals Clint. And once the search has identified various patents, and then the numbers of the searches, S and E names, assignee names, the paralegal indicated what subsets of those groups he wanted printed out.

MR. WHEAT: Excuse me, Mr. Bennett. I think I know where you're going, and we'll be willing to stipulate, if you want to suggest the stipulation.

MR. BENNETT: Well, can we stipulate so we already have the testimony that this is, [p. 48] in fact, the patent search report that was done in response to the identification of the Clint name, and that it resulted in the identification of a series of patents, and that's really where I was getting at, is patent number, date of issue, description, on that line, and that the patents attached are, in fact, the patents reflected in the report. There are

two missing, and we're going to be asking about that in a moment.

MR. WHEAT: We're willing to stipulate it was a search conducted November 10, 1992 seeking to discover patents which had been assigned by a company named Clint, if that's what you need. I mean, we'd like the testimony from the witness that this is the entire search. Other than that, I think we're in agreement that this exhibit's fine.

BY MR. BENNETT:

Q. Just a couple issues, then, very quickly. This search was done November 11, not on November 10.

A. Yes, it was done on the 11th.

Q. And with regard to the patents that were discovered in this search, did this search result in the discovery of, or any reference to, the Marc '037 patent?

A. This search did not identify the Marc '037 patent, and may I just say that the search report itself is the first six pages. The patents attached to it are [p. 49] ones that we ordered subsequently.

Q. And that we've attached to it so the Court would have them available to it, correct?

A. Apparently this exhibit is a compilation, yes.

Q. There are only four patents attached here. There are two that are omitted, specifically the S – let's see.

A. There are two. Bicycle sprocket drive and the biological staining method appear to be so far afield that we did not even order copies of those.

Q. Did your firm undertake any – counsel's question, any searches beyond the search under the name Clint, Inc. and produce a report other than this report?

MR. WHEAT: I think my concern was whether this was the entire report of that search.

A. This is the entire report of that search.

MR. WHEAT: Now to the next question.

Q. The next question was, did you do any other searches beyond this search?

A. No.

Q. Did you disclose the results of this search to the patent office?

A. We disclosed two of the patents that were identified in the search.

* * *

[p. 53] anything bearing on the subject matter.

A. Correct.

Q. Why did you make this disclosure that you did as broad as it was?

A. Well, we realized from prior dealings with Adams' attorneys that the patent we were going to be getting had a strong likelihood of being involved in a proceeding, and we wanted to make sure that the patent had emerged from the '222 application as strong as possible, and we could see that the failure to disclose these references would weaken the strength of the patent at issue and made it more subject to attack.

Q. At any point in your prosecution of either the '110 or '702 patents, did Donald Nelson ever tell you that he knew of the Marc '037 patent?

A. No.

Q. At any point in your prosecution of either the '110 or '702 patents, did Donald Nelson ever tell you he knew the process described in the Marc '037 patent?

A. No.

MR. BENNETT: Your Honor, may I have one moment, please? Counsel,you may want to pull your list. I'd like to run through.

Your Honor, at this time I would like to offer into evidence, pursuant to either the testimony or

* * *

[p. 59] trouble right now distinguishing between what he told me at the time about what he knew about that process and what I now know about the process.

Q. I believe you said that you informed him of his obligation to disclose any pertinent information he was aware of.

A. Oh, yes.

Q. And in response to that, he indicated to you that he really didn't understand what Mr. Lammy was referring to.

A. He couldn't give me a lot of details. He told me what he knew about FoamAid and the information that it was covered by a patent.

Q. He did tell you he was aware it was a process covered by a patent?

A. Yes.

Q. Did he tell you he had a copy of that patent?

A. No.

Q. What's the shorthand we attorneys use and courts use when they reference a patent? They use the last three numbers?

A. Correct.

Q. And which name?

A. The first name inventor.

Q. The name of the inventor, not the name of the [p. 60] assignee?

A. There are times when we do refer to the assignee, but most often it's the Marc '037 patent.

Q. Did you or anyone on your behalf or on Mr. Nelson's behalf, to your knowledge, search under the name Marc?

A. No.

Q. Do you recall Mr. Nelson telling you Marc was the patentee?

A. No, not at the time we did the search.

Q. Do you recall telling Mr. Nelson that you searched under the name Marc?

A. I recall a letter in which I reported to Don that we had done a search based on the information that he had provided us regarding Marc and Clint.

MR. BENNETT: Yes. That's Defendant's Exhibit 28, Your Honor.

Q. Would you like to see that letter?

A. I'll wait for your question.

MR. WHEAT: May I approach the witness, Your Honor?

THE COURT: Surely. That's your 28, which is the letter of 11-12-92?

MR. WHEAT: Yes, Your Honor.

BY MR. WHEAT:

[p. 61] Q. Second paragraph, fourth line, the sentence begins, "The three patents were identified in a search we performed using the information you provided to us regarding Michel Marc and Clint, Inc." Is that what you said?

A. That's what I said in this letter, yes.

Q. Was there a Marc search?

A. No, there was not.

Q. Why not?

A. The information Mr. Nelson had given us was Clint. We subsequently, in reviewing the search results, identified Marc – we being members of my firm – as being a commonly named inventor on just about all of

them. We found that yet another patent cited within one of the Marc, slash, Clint patents and communicated to Don prior to sending him this letter, and at that time Don indicated to us that the name Marc was familiar to him.

Q. Okay. For references cited, the patent office uses the name of the inventor, not the name of the assignee, correct?

A. Correct.

Q. If Mr. Nelson testified that he told you that the patentee was Marc, is it your testimony that he did not tell you that, or you don't recall?

[p. 62] MR. BENNETT: Objection. At what time, counsel? There's no time reference in this question, Your Honor.

Q. In response to Lammy's refusal to execute the inventor declaration, you sent a letter to Mr. Nelson saying, "You have a duty to disclose everything pertinent." Mr. Nelson, you may assume, testified that at that time he told you that Michel Marc was the inventor. Do you recall him telling you that at that time?

A. No. What I do recall is our communicating the results of the search on Clint, and Don indicating that the naming of Marc was consistent with his knowledge of the FoamAid subject.

Q. And in your letter you said a search was conducted using the information he gave you regarding Michel Marc and Clint, Inc.; is that correct?

A. Right, a search was performed.

Q. The search, introduced today as Exhibit 12, was only a search in the Clint name; is that correct?

A. That's correct.

Q. You're testifying a search was not conducted in the Marc name.

A. Correct, a search was not performed in the Marc name.

[p. 63] Q. I believe you testified that the Patent and Trademark office conducts a search when it is considering application for a patent; is that correct?

A. Correct, yes.

Q. How good are those searches?

A. Well, they're as good as the examiner's knowledge of the subject matter and formulation of the search. They're as good as the completion of the search categories.

Q. How many patents have been issued in the U.S.?

A. About five-and-a-half million.

Q. They also search international patents, don't they?

A. As entered into the files, yeah.

Q. It's not uncommon for the patent office to miss pertinent prior patents; is that correct?

A. It happens, and that's the subject of many lawsuits.

Q. In the United States Patent Quarterly, there are cases where a patent is invalidated based upon a previous patent that was not known to the patent office or not located by the patent office.

A. That's correct.

Q. That's why there's also the duty of disclosure placed upon the patent attorney and the assignee to [p. 64] disclose anything they know that's pertinent.

A. Yes. Recognizing that the search capabilities at the patent office are not one hundred percent. The PTO and the American public counts on the applicant and its representatives to say what they know.

Q. In lay terms, I think, it's a duty to over disclose, to disclose stuff you think is not controlling, but perhaps pertinent, to let the patent office make that determination.

A. I've never heard of a duty to over disclose.

Q. When you do a database search, which is the type that has been produced today, what's the methodology, generally?

A. You have to select the database to use, knowing what were the entries made, and then you select your keyword to enter.

Q. It's a word search. You say, "Search mold." It's not going to find a patent unless mold is in the title.

A. Your search results are only as good as the keyword you enter.

Q. Was a full search conducted? Do you know what I mean by that term?

A. I don't know what you mean by that term.

Q. What I mean by it, you go to an outside search [p. 65] service, which digs through the patents and sends you everything they think is pertinent so they're not crippled by that word search methodology.

A. I did not commission a full search on either of the two applications that led to patents in this case.

Q. Who was Mr. Rywalski? I believe you mentioned him earlier in your testimony.

A. Rywalski was one of the attorneys of record for the '824 application. Rywalski was an attorney in the Willian Brinks Toledo, Ohio office.

Q. Were you aware that Mr. Nelson discussed the FoamAid process with Mr. Rywalski?

A. Yes. No, I'm sorry. No, I'm not aware that Mr. Nelson discussed FoamAid with Mr. Rywalski. I'm sorry. As a matter of fact, I don't know many of the details of discussions between Nelson and Rywalski.

Q. The declaration which you prepared for Mr. Nelson previously in this lawsuit, referred to as Defendant's Exhibit 6, but the copy you have is Exhibit 13, do you have that before you?

A. Yes, I do.

Q. What is the purpose of that document?

A. The purpose of the document is to provide support to proceed without one of the originally named inventors, in this case Mr. Lammy.

* * *

[p. 68] allowability?

A. It's the examiner's narrative comments elaborating on some of the form – points made in the form cover sheet, notice of allowability.

Q. Let me point you to the examiner's narration in numbered paragraph 3, beginning at line 8. Towards the end of that line, the sentence, "The letter also indicates that Mr. Nelson was a former salesman for the company in question. Mr. Nelson in his declaration states that other than the three patents that he had submitted for the file, he has not been able to obtain any other information about the process."

Is the examiner relying on Mr. Nelson's assertion that he really wasn't familiar with that process?

A. Yes.

Q. And then he references the three patents, saying they really don't relate to the process that's mentioned in your Purdue letter, and then concludes that there's a lack – this is the last four lines of that numbered paragraph – "lack of any supporting evidence or information concerning the alleged process, the examiner finds that a prima facie case of public use has not been established." What does that mean to you?

A. He made about two or three statements, the [p. 69] first of which referred to something in the Purdue

letter, which I don't think the examiner described here. So I'm not – to give you the answer, I'm afraid I'm going to adopt something I don't think was accurate.

Q. You're saying there was no proof that what the examiner says is true, that the three patents that Nelson disclosed to me have nothing to do with what Lammy says the process is?

A. I think the examiner is saying that he doesn't find grounds to say that public use should be the basis of a rejection in this case.

Q. It says that a case of public use has not been established, doesn't it, the last six words of that paragraph?

A. Yeah, he says that.

Q. Paragraph 5, does he say, "If I'm mistaken and you know something else, let me know"? Is that the effect of what paragraph 5 says?

A. Yes. It's an invitation to supplement the record.

Q. Did you or Nelson ever indicate to the patent office that Mr. Nelson knew exactly what Mr. Lammy was referring to, and yes, that process does exist?

A. We indicated in the declaration what we knew about the FoamAid process, and that was our complete [p. 70] knowledge at the time. We submitted the declaration at the time we received this notice of allowability.

Q. Again, what did Mr. Nelson tell you he knew about the FoamAid process? My recollection was that he told you he really didn't know much about it.

A. Well, he knew it was covered by a patent.

Q. Did he ever tell you that Lammy's description is accurate?

A. Lammy's description of the process – I don't think he disputed the Lammy description of the process.

Q. Did you tell the patent office, "Lammy's description of the process is accurate of the preexisting process; we think what he's referring to is patent '167"?

A. Well, we submitted the Purdue letter so the examiner could be in the same position we were in in evaluating the significance of the information, and then went a step beyond to try to identify patents that pertain to that process and conducted the search and submitted the results of that search.

Q. Mr. Nelson did not tell you that he had a copy of the Marc patent at the time that all this transpired; is that correct?

A. Correct.

MR. WHEAT: That's all, Your Honor.

* * *

[p. 77] DONALD NELSON,

after being first duly sworn to tell the truth, the whole truth and nothing but the truth, testified and said as follows:

DIRECT EXAMINATION OF DONALD NELSON

BY MR. KERGER:

Q. You are Donald Nelson?

A. Yes.

Q. Where do you live?

A. Adrian, Michigan.

Q. Are you a married man?

A. Yes.

Q. Have children?

A. Yes.

Q. How many?

A. Four.

Q. Grown?

A. Yes.

Q. You work?

A. Yes.

Q. Where do you work?

A. At Ohio Cellular Products in Wauseon, Ohio.

Q. What's your title?

A. President, CEO.

Q. How long have you been with Ohio Cellular?

[p. 78] A. Since its inception approximately eight, nine years ago.

Q. Let's step back a little bit. Graduated from college?

A. Yes.

Q. What was your degree?

A. My degree was a bachelor of arts, majoring in architecture and interior design.

Q. Where from?

A. Lawrence College in Appleton, Wisconsin.

Q. Where did you go after that?

A. Witkiwana (phonetic) Manufacturing Company in Adrian, Michigan. I was their rep in the state of Wisconsin.

Q. What did you rep for?

A. Their science laboratory. They're manufacturers of science lab manufacturing furniture.

Q. What did you do next?

A. I subsequently was made a head of a new division for Witkiwana, which was involved in museum case work, and I was transferred to Statesville, North Carolina, and I was in charge of designing and developing museum interiors.

Q. How long did you do that?

A. Approximately 12 years.

* * *

[p. 82] THE WITNESS: I'm sorry, Your Honor. I'm sorry.

Q. Where did you go then?

A. I then went to – because of my involvement in rotational molding and having spoken at the Association of Rotational Molders on design work, and so forth, I was asked by a rotational molder in Chicago for me to come over there for a six-month tour of duty to be a consultant to him in a rotational molding company.

Q. Did you do that?

A. Yes, I did.

Q. How long were you involved in that?

A. It ended up being a three-year stint.

Q. Did you have any other involvement over that three-year period?

A. Yes, I did, because I was basically enamored with the field of crosslinked polyethylene foam. Because we had started it at Roto Plastics, I was basically pursuing that. And having several friends in the foam industry, I started being a rep for him out of the Chicago area.

Q. Which company did you rep for?

A. One of them was FoamAid Industries.

Q. What aid you understand FoamAid to be?

A. FoamAid was a fabricator of foam, and they [p. 83] basically were strongly involved in the automotive industry.

Q. What did you do for them?

A. I represented them as a manufacturer's representative. I was never employed by them.

Q. Did there come a time when you became aware of an RF process – do you know what RF is, radio frequency?

A. Yes.

Q. – being used at FoamAid?

A. Yes.

Q. How did you become aware of it?

A. I was told by some of the engineers there that they had this process that Voltek was looking for them to license, and they were trying it out.

Q. Voltek, V-O-L-T-E-K?

A. Yes.

Q. What was Voltek?

A. Voltek was a manufacturer and supplier of crosslinked polyethylene foam.

Q. What was the relationship between Voltek and FoamAid?

A. FoamAid is one of their largest distributors.

Q. Did they tell you anything that they – beyond that they were trying this process?

[p. 84] A. Not really, because it was a – it was very private, and no one was to be involved in this. I was working with FoamAid on the process of compression molding; same thing we did at Roto Plastics, and we were then doing business with Bike Athletic in Knoxville, and so forth.

Q. Did there come a time when you were shown something that was described to be the RF process?

A. Yes. I did see it briefly for one time as we were going out to the area that they used for my type of molding, and we stopped, and we looked, and he described basically that that's what they were doing, and we proceeded on.

Q. How long did you stand there?

A. Just a few minutes.

Q. Who was the he who showed it to you?

A. I forget the gentleman's name, but it was one of the engineers at FoamAid.

Q. Were you told it was patented?

A. I wasn't really told it was patented outright; however, I assumed that it was, because Voltek was trying to license this to FoamAid, and they were very secretive about it.

Q. Did you hear the name Michel Marc?

A. No, I did not.

* * *

[p. 107] that the methodology?

A. I believe so, yes.

Q. When were you with FoamAid as a manufacturer's rep?

A. '83, probably, to 1985, '86.

Q. While you were with FoamAid as a rep, you were aware that they precut the parts and put them in the mold; is that correct?

A. On which process? There are several processes.

Q. The radio frequency process.

A. Yes.

Q. Is it fair to say that it was about 1984 that you were aware that FoamAid was using this process?

A. Yes.

Q. Is it fair to say that as early as 1984 you were aware that the process was patented?

A. I assumed that it was patented. I was not directly told it was patented.

Q. Do you recall testifying somewhat differently on – I'm referring to page 39 of volume I of your deposition. That was the one taken in December of 1994. Page 39, beginning at line 14, you stated, "They were licensing it through Voltek."

And then my question was: "Are you aware of any patents that were involved?"

[p. 108] Your answer was: "No. Yes, excuse me. Yes, there were patents involved."

A. Right. From what – I was basically under the assumption there were, but I was not told directly. That's true. That's very true.

Q. Who is David Halstead?

A. David Halstead? David Halstead was with Bike Athletic, and subsequently, later, when Bike Athletic sold their football division, he went with Athletic Helmets.

Q. Do you recall trying to sell to Bike parts manufactured by this process?

A. I did not sell any parts by the radio frequency process sold to Bike whatsoever.

Q. Do you recall telling Bike that it was a patented process, that it was so efficient and so inexpensive that they couldn't obtain the parts at a better price, that they should acquire them from FoamAid?

A. No.

Q. Do you recall bringing David Halstead from Bike to FoamAid and showing him the process?

A. I recall David Halstead coming up to FoamAid with several other Bike people, but the main purpose was to sell them on the compression molding of their parts,

* * *

[p. 115] what he had learned from a former salesman at FoamAid –

A. Who was that?

Q. – as well as from someone who represented a FoamAid customer. "Specifically, more than one year before the '824 application was filed, FoamAid took orders, and filled some of them, for athletic pads which were produced by cutting preforms from partially crosslinked polyethylene foam, placing the preforms, in a non-sticky state, at about room temperature, into molds and

using RF heating to heat the preforms causing them to conform to the mold cavity."

You saw that letter; is that correct, sir?

A. Yes, sir.

Q. You knew exactly what Mr. Lammy was referring to, didn't you?

A. I knew what some of those items were, yes.

Q. What did you think he was referring to?

A. The FoamAid process of RF heating.

Q. Was there anything in his description of the process that you disagreed with?

A. Yes.

Q. What?

A. That the process of which he talked about, the fact of cutting the preforms from partially crosslinked polyethylene foam, that was the whole RF process, and

* * *

[p. 127] did not know.

Q. And my question was, it was the one that was provided a couple of years ago, so that would have been in 1992. This deposition was taken in 1994.

A. That was an error on my part.

Q. Regardless of when you had the '037 patent, you did know about the process prior to filing your patent application.

A. I knew about the FoamAid process, yes.

Q. But never disclosed it to the Patent and Trademark Office?

A. No.

Q. One last reference, if you could look at the December 1994 transcript, at page 112; do you have that page?

A. Yes, I do.

Q. Beginning at line 11, "Earlier in this lawsuit your attorney prepared – provided us with a document which they numbered as document 000281." Which is Marc '037 patent. And I asked you, "Do recognize this item?"

And your answer was, "Yes."

My question was: "What's that?"

Your answer was: "That's the patent for the RF sealing that was given to us, right."

Question: "The one you had a few years [p. 128] ago?"

Answer: "Yes. Or whatever this document of Purdue's letter for Lammy, whenever that was, yes."

A. Yes.

Q. Do you recall so testifying?

A. Yes. There, again, the same reference to the two years ago was a miss on my part, the wrong time. I didn't accurately state that.

MR. WHEAT: No further questions, Your Honor.

REDIRECT EXAMINATION OF DONALD NELSON

BY MR. KERGER:

Q. Mr. Nelson, irrespective of deposition testimony, are you telling Judge Katz today that you didn't have the '037 patent in your mind, or any information given to you, until September of some year after this lawsuit started?

A. Yes.

MR. WHEAT: And for the record, we'd like to object to this. This is an attempt to recant clear judicial admission.

MR. KERGER: There may be many things.

THE COURT: That's the whole reason

* * *

[p. 131] represented a FoamAid customer. "Specifically, more than one year before the '824 application was filed, FoamAid took orders, and filled some of them, for athletic pads which were produced by cutting preforms from partially crosslinked polyethylene foam, placing the preforms, in a nonsticky state, i.e., at about room temperature, using RF heating to heat the preforms causing them to conform to the mold cavity."

That's the process you discussed with Mr. Rywalski before filing the first patent application; is that correct?

MR. KERGER: I object. He's gone into that –

A. No.

MR. KERGER: – almost exact question.

A. No.

Q. Let me refer –

A. This is not true, in this statement here. I never sold a football body pad with this process to Bike Athletic.

Q. Let me refer you to the December 1994 deposition at page 158 where my question for you was: "You knew what Mr. Lammy's attorney was referring to, didn't you?"

[p. 132] Answer: "Yes. Because we – Mr. Lammy and Mr. Rywalski, the attorney and I discussed what – the RF process prior to our filing the '824 application. It isn't that Mr. Lammy learned about this right here. Mr. Lammy knew about it before, and we discussed that."

A. Yes. That was a FoamAid process. It does not say the '037 Marc patent.

Q. A few lines down, line 13, the question was: "But there was no question in your mind what Mr. Lammy's attorney was referring to in this letter, was there?"

Answer: "I – no question other than I did not know about, if that was the case, right."

Question: "Now, you knew he was referring to the Marc process that FoamAid had experimented with."

Answer: "Yes."

A. Correct, which I have learned that the Marc process predates what we're referring to. It was before this deposition, and when you referred to it as the Marc process, then I knew that that was the Marc process.

THE COURT: Thank you very much. You may step down.

MR. KERGER: Your Honor, we have no further witnesses.

THE COURT: Anything further for the plaintiff – from the defendant? I'm sorry.

* * *

Exhibit 12

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E5	14	PA=CLINTEC
E6	14	PA=CLINTEC NUTRITION CO
E7	1	PA=CLINTEX
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S1 6 PA="CLINT": PA="CLINT INC"
? T 1/22/ALL

1/22/1 (Item 1 from file: 340)
2203953

United States Patent Patent Number: US 5068983
Date of Patent: 911203

SHOE INSOLE

Inventor(s): Marc, Michel, Wellesley, MA, (US)
Assignee: Clint, Inc, Natick, MA
Appl. No.: US 621630
Filed: 901203

Related U.S. Application Data

Continuation of(Ser*,Date,Pat#):

US 340751	890410	ABANDONED
US 512039	900413	ABANDONED

Priority Applic(Ser#,Date):

US 621630	901203
US 340751	890410
US 512039	900413

Int. Cl. ... A43B-013/41; A43B-013/40
U.S. Cl. .. 036044000; 036043000; 036071000
Field of
Search .. 036043000; 036044000; 036071000; 128586000; 128614000; 128619000

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US 4435910	198403	036044000	Marc
US 4510700	198504	036044000	Brown
US 4513518	198504	036043000	Jalbert et al.
US 4580356	198604	036043000	David
US 4633598	198701	036044000	Moronaga et al.
US 4642912	198702	036044000	Wildman et al.
US 4674204	198706	036044000	Sullivan et al.
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US 4782605	198811	036044000	Chapnick
US 4793078	198812	036044000	Andrews
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US 4823420	198904	036044000	Bartneck
US 4823483	198904	036044000	Chapnick
US 4962593	199010	036044000	Brown

Primary Examiner – Meyers, Steven N
Attorney, Agent or Firm – Wolf, Greenfield & Sacks

016 Claims, 6 Drawing Figures, 3 Drawing Sheets

1/22/2 (Item 2 from file: 340)
1965364

United States Patent Patent Number: US 4851167
Date of Patent: 890725

MOLDING PROCESS AND APPARATUS; FLEXIBLE DIAPHRAGM BALANCED PRESSURE RELEASE

Inventor(s): Marc, Michel, Wellesley, MA, (US)
Assignee: Clint, Inc, Natick, MA
Appl. No.: US 95862
Filed: 870914

Related U.S. Application Data

Priority Applic(Ser#,Date): US 95862 870914
Int. Cl. B29C-067/22; B29C-035/12; B29C-039/42; CO8J-009/06
U.S. Cl. 264026000; 264040500; 264045200; 264054000; 264101000; 264314000; 425149000; 425388000; 425389000; 425817000R
Field of Search .. 264025000; 264026000; 264040500; 264045200; 264054000; 264101000; 264313000; 264314000; 425149000; 425388000; 425389000; 425817000R

References Cited

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Patent Number	Date YYYYMM	Class	Inventor
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US 2907074	195910	264314000X	Rhodes
US 2929109	196003	264314000X	Cresap
US 2937401	196005	264314000X	Amos
US 2979246	196104	264054000X	Liebeskind
US 3389198	196806	264054000X	Taber
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Patent Number	Date YYYYMM	Class
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JP 57151320	198209	264045200

Primary Examiner – Anderson, Philip
Attorney, Agent or Firm – Wolf, Greenfield & Sacks

026 Claims, 3 Drawing Figures, 1 Drawing Sheets

1/22/3 (Item 3 from file: 340)
1326057

United States Patent — Patent Number: US 4268238
Date of Patent: 810519

FLOW MOLDING

Inventor(s): MARC MICHEL, (US)
Assignee: CLINT INC
Appl. No.: US 88776
Filed: 791029

Related U.S. Application Data

Cont-in-part of(Ser#;Date,Pat#);

US 853127	771121	ABANDONED
US 886055	780313	ABANDONED

Priority Applic(Ser#,Date):
US 88776 791029
US 853127 771121
US 886055 780313

Int. Cl. B29H-005/26;
U.S. Cl. 425174800E; 264025000; 264026000; 425174000; 425174800R

1/22/4 (Item 4 from file: 340)
1245916

United States Patent Patent Number: US 4193324
Date of Patent: 800318

BICYCLE SPROCKET DRIVE APPARATUS WITH ELLIPTICAL PEDAL PATH

Inventor(s): MARC MICHEL, (US)
Assignee: CLINT INC
Appl. No.: US 864278
Filed: 771227

Related U.S. Application Data

Priority Applic(Ser#,Date): US 864278 771227

Int. Cl. F16H-001/28; B62M-001/02; B62M-003/06
U.S. Cl. 475349000; 074437000; 074594200; 280260000; 474141000; 475331000

1/22/5 (Item 5 from file: 340)
1204820

United States Patent Patent Number: US 4153254
Date of Patent: 790508

PUZZLE

Inventor(s): MARC MICHEL, (US)
Assignee: CLINT INC
Appl. No.: US 826356
Filed: 770822

Related U.S. Application Data

Priority Applic(Ser#,Date): US 826356 770822

Int. Cl. A63F-009/12;
U.S. Cl. 273160000; 035072000

1/22/6 (Item 6 from file: 340)
0726276

United States Patent Patent Number: US 3678151
Date of Patent: 720718

BIOLOGICAL STAINING METHOD

Inventor(s): HORONICK ANDREW, (N/A); MUNSCHY ANDRE V, (N/A)
Assignee: GUGOL-CLINT-TEX, INC.
Appl. No.: US 845089
Filed: 690725

Related U.S. Application Data

Cont-in-part of(Ser#;Date,Pat#):

US 562487	660705	ABANDONED

Priority Applic(Ser#,Date):

US 845089	690725
US 562487	660705

Int. Cl. G01N-001/30; G01N-033/16
U.S. Cl. 424003000; 435029000; 435808000; 436169000

? cost

11nov92 10:58:47 U. 111587 Session A1152.2
Sub account: OHIO CELLULAR/91 P 318 (WGB)
$0.00 0.000 Hrs File125
$0.00 Estimated cost File125
$4.80 0.032 Hrs File340
$1.20 2 Type(s) in Format 22
$1.20 4 Type(s) in Format 32
$2.40 6 Types
$7.20 Estimated cost File340
OneSearch, 2 files, 0.033 Hrs FileOS
$0.36 DIALNET
$7.56 Estimated cost this search
$9.11 Estimated total session cost 0.066 Hrs.

Exhibit 13

3:94 CV 7251

Attorney Docket No. 91P318

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PATENT APPLICATION OF:	)
DONALD E. NELSON and JAMES E. LAMMY, SR.	) Group Art Unit 1307
SERIAL NO. 07/790,222	)
FILED: NOVEMBER 8, 1991	) Examiner James Lowe
FOR: METHOD OF FORMING A CROSS LINKED FOAMED POLYOLEFIN ARTICLE (AS AMENDED)	)

DECLARATION UNDER 37 C.F.R. §1.47(a)

In support of my petition to proceed on behalf of myself and an omitted joint inventor, Mr. James E. Lammy, Sr., I, Donald E. Nelson, state:

1. Mr. Lammy and I have assigned all of our rights in this patent application to Ohio Cellular Products Corporation (of which I am the President), and the Assignment includes an obligation to "execute any and all supplemental oaths . . . should the same be proper and necessary" (See Assignment at Exhibit A).

2. Accordingly, I have asked Mr. Lammy to cooperate in the prosecution of this application by executing a Supplemental Declaration.

3. On the advice of his attorney (see letter at Exhibit B), Mr. Lammy has refused to sign the Supplemental Declaration on the ground that Mr. Lammy now believes he is not a first and joint inventor of the method claimed by this application. In this regard, Mr. Lammy has alleged that, prior to the date of this application, a company called FoamAid filled some orders for athletic pads which were produced by cutting preforms from partially cross-linked polyethylene foam, placing the preforms, in a non-sticky state, *i.e.*, at about room temperature, into molds and then using radio frequency heating to heat the preforms so that the preforms conform to the mold cavity.

4. I believe that the FoamAid process might have been the subject of a U.S. patent or patents, and upon further investigation I have identified three U.S. Patents, Nos. 4,268,238, 4,441,876 and 4,851,167 (Exhibits C, D and E, respectively), as possibly pertaining to the alleged FoamAid process. Beyond identifying these three patents, however, I have been unable to ascertain any more information concerning the process allegedly used by FoamAid than that recently disclosed to me by Mr. Lammy and his attorney (see Exhibit B).

5. I submit, however, that the alleged FoamAid process is impertinent to the patentability of the claims pending in the present application because, even if the FoamAid process could somehow be shown to qualify as prior art here, the heating step of the claimed process comprises *thermoforming* preforms to

conform them to the shape of a closed mold cavity, in contrast to the *radio frequency heating* in the FoamAid process as described by Mr. Lammy and his attorney, and as described in U.S. Patent No. 4,851,167 (Exhibit E) to the extent it pertains to the alleged FoamAid process.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

/s/ Donald E. Nelson
Donald E. Nelson
Applicant

Attachment B To Exhibit 13

PURDUE LAW OFFICES
SUITE B-2
2735 NORTH HOLLAND-SYLVANIA ROAD
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JOHN C. PURDUE

DAVID C. PURDUE

October 6, 1992

Mr. James E. Lammy, President
Scott Port-a-fold Inc.
100 Taylor Parkway
Archbold, OH 43502

Dear Jim:

As you requested, I have reviewed a "Supplemental Declaration" and a preliminary amendment to which it refers. These papers were given to you by Don Nelson who asked you to sign the declaration. The papers concern US application Serial No. 790,222 ('222) which was filed November 8, 1991, apparently as a continuation of application Serial No. 541,588. The latter application was filed June 21, 1990 as a division of application Serial No. 180,824 ('824) which was filed April 12, 1988. The latter application, filed by you and Don Nelson, matured on December 25, 1990 as patent No. 4,980,110.

At the time the '222 application was filed, a preliminary amendment was filed which deleted all reference to room temperature; I believe that the amendment was deemed by the Examiner to constitute new matter, necessitating the filing of a declaration by the inventors. We

have discussed your concerns about signing a document which recites that "I believe that I am one of the original, first and joint inventors of the subject matter which is claimed and for which a patent is sought . . . " in view of what you have learned from a former salesman at FoamAid as well as from someone who represented a FoamAid customer. Specifically, more than one year before the '824 application was filed, FoamAid took orders (and filled some of them) for athletic pads which were produced by cutting preforms from partially cross-linked polyethylene foam, placing the preforms, in a non-sticky state, i.e., at about room temperature, into molds and using r.f. heating to heat the preforms causing them to conform to the mold cavity. The details of the FoamAid method were disclosed outside the company without restrictions on its use, for example, to the representative of the FoamAid customer. Accordingly, the FoamAid process described above is prior art to the pending application and its predecessors.

The preliminary amendment which was filed November 8, 1991, presented new claims 34 through 56. New claim 44, reproduced below, is representative of the new claims:

> 44. A method for forming a foamed moldable polyolefin into an article in a mold having partible mold portions, said mold, when in a closed position, defining an article forming cavity and having a peripheral parting surface, the method comprising the steps of: cutting stock of said polyolefin into a preform; positioning said preform into said mold so that, upon closing said mold and heating same, said mold cavity is filled with said preform but said preform does

not laterally extend into said peripheral parting surface; and closing said mold and heating said closed mold containing said preform for a sufficient period of time for said preform to conform to the adjacent mold cavity.

In view of the facts recited above, you are not, in my opinion, an original, first and joint inventor of the method which is claimed in US Patent No. 4,980,110 or the method presently claimed in the '222 application. Accordingly, I advise you to not sign the supplemental declaration for the '222 application. I am aware that you executed an assignment of the '824 application in favor of Ohio Cellular and agreed therein "to execute any and all supplemental oaths . . . should the same be proper and necessary . . . " Your obligations under this provision do not extend so far as requiring you to execute a supplemental paper which states that you believe that you are the first inventor when, in fact, you do not believe that to be true.

I am sending a copy of this letter to Mr. Fieseler so that he is aware of my advice to you as well as the bases for my advice. I do not know whether this will necessarily conclude the matter. For example, BSN may proceed without your signature under 37 CFR §1.47. A copy of this section is enclosed. In that event, Don Nelson, as a former FoamAid salesman, and Mr. Fieseler, as a recipient

of a copy of this letter, are both obliged to disclose this information to the Patent and Trademark Office.

Sincerely yours,

/s/ David C. Purdue
David C. Purdue

Enclosures

c: Robert Fieseler, Esq., Certified Mail, Return Receipt Requested.

Exhibit 14

ATTACHMENT TO THE *NOTICE OF ALLOWABILITY*

1. Claims 34-56 are allowed.

2. The terminal disclaimer filed on November 23, 1992 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US patent 4,980,110 has been reviewed and is accepted. The terminal disclaimer has been recorded.

3. There is an allegation in connection with the Declaration filed under 37 CFR §1.47(a) of prior public use or sale more than one year before the filing of the grandparrent [sic] of this application. A letter submitted as Exhibit B sets forth a process which is alleged to be the process instantly claimed. No direct evidence is submitted to support this allegation. Mr. Lammy's attorney writes that Mr. Lammy learned of this alleged prior use process from a former salesman and and [sic] a customer. The letter also indicates that Mr. Nelson was a former salesman for the company in question. Mr. Nelson in his declaration states that other than the three patents that he has submitted for the file, he has not been able to obtain any other information about the process. The alleged process is stated to use RF heating and the three patents do not mention the use of foamed, crosslinked polyethylenes in the claimed processes. Also there is no teaching of how to avoid flash or of how to form a smooth edge at the mold parting line. In view of the differences pointed out above and the lack of any supporting evidence or information concerning the alleged process, the Examiner finds that *a prima facie* case of public use has not been established.

4. The following is an Examiner's Statement of Reasons for Allowance: a principal reason for the allowance of these claims is the lack of any teaching or suggestion to mold foamed, cross-linked polyolefin articles that are free of flash at the mold parting line, by positioning a foamed and cross-linked polyolefin in the mold cavity of a mold having partible mold halves, while in a non-tacky state, and heating the mold until the polyolefin conforms to the shape of the mold.

5. Any comments considered necessary by applicant must be submitted no later than the payment of the Issue Fee and, to avoid processing delays, should preferably **accompany** the Issue Fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James B. Lowe whose telephone number is (703) 308-3834.

7. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0651.

/s/ James B. Lowe
JAMES LOWE
PRIMARY EXAMINER
Art Unit 1307

jbl
7/15/93

DEFENDANT'S EXHIBIT 28

Law Offices

McANDREWS, HELD & MALLOY, LTD.

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[Names Omitted In Printing]

November 12, 1992

VIA FEDERAL EXPRESS

Donald E. Nelson
President
Ohio Cellular Products Corporation
9610 County Road 14
Wauseon, Ohio 43567

Re: U.S. Patent Application Ser. No. 07/790,222
METHOD OF FORMING A CROSS LINKED FOAMED POLYOLEFIN ARTICLE
Donald E. Nelson and James E. Lammy, Sr.
Our file No. 91P318

Dear Don:

Further to Pat Arnold's letter to you of November 10, 1992, enclosed for your review and signature is a replacement Declaration Under 37 C.F.R. §1.47(a). Please discard the earlier version of the Declaration Under 37 C.F.R.

§1.47(a) transmitted as item (4) with Pat Arnold's November 10 letter, but retain the Terminal Disclaimer, Supplemental Declaration, and Petition To Proceed On Behalf Of An Omitted Inventor transmitted as items (1), (2) and (3) with Pat's letter.

As you can see, the replacement Declaration differs from the November 10 version in that paragraphs (4) and (5) refer to three patents we have identified that might possibly pertain to the alleged FoamAid process. The three patents were identified in a search we performed using the information you provided to use regarding Michel Marc and Clint, Inc. The three patents are attached to the replacement Declaration as Exhibits C-E, in addition to the Assignment from Lammy to OCP (Exhibit A) and letter from Lammy's attorney (Exhibit B).

As explained in Pat's earlier letter, the absolute deadline for filing these documents is *November 20, 1992*. In that regard, if you are now satisfied with the contents of replacement Declaration and the documents listed as items (1), (2) and (3) in Pat's November 10 letter, please sign them and then forward them to us as soon as possible, preferably by overnight delivery.

Please call me or Pat Arnold if you have any questions about the enclosed replacement Declaration or any of the other documents enclosed with Pat's November 10 letter.

Very truly yours,

/s/ Bob Fieseler
Robert W. Fieseler

PJA/dp
Enclosures
cc: Patrick J. Arnold Jr., Esq.

United States Court of Appeals
for the Federal Circuit

ORDER

A combined petition for rehearing and suggestion for rehearing in banc having been filed by the APPELLANT, DONALD E. NELSON, and the petition for rehearing having been referred to the panel that heard the appeal, and thereafter the suggestion for rehearing in banc having been referred to the circuit judges who are in regular active service.

UPON CONSIDERATION THEREOF, it is

ORDERED that the petition for rehearing be, and the same hereby is, DENIED and it is further

ORDERED that the suggestion for rehearing in banc be, and the same hereby is, DECLINED.

The mandate of the court will issue on June 10, 1999.

FOR THE COURT,

/s/ Jan Horbaly
Clerk

Dated: June 3, 1999

cc: ERNEST R. BAZZANA
JACK A. WHEAT

OHIO CELLULAR V ADAMS USA, 98-1448
(DCT – 94-CV-7251)

* Note: Pursuant to Fed. Cir. R. 47.6, this order is not citable as precedent. It is a public record.